



University of Bradford eThesis

This thesis is hosted in [Bradford Scholars](#) – The University of Bradford Open Access repository. Visit the repository for full metadata or to contact the repository team



© University of Bradford. This work is licenced for reuse under a [Creative Commons Licence](#).

**Working from Home in the Clinical Trials Sector: A
Case Study of Clinical Research Associates (CRAs) in
the UK**

A. CHRONOPOULOS

PHD

2016

**Working from Home in the Clinical Trials Sector: A Case Study of Clinical
Research Associates (CRAs) in the UK**

Andreas CHRONOPOULOS

BSc, BSc (Hons), MSc, PGDip

Submitted for the Degree of
Doctor of Philosophy

School of Management

University of Bradford

2016

Abstract

Andreas Chronopoulos

Working from Home in the Clinical Trials Sector: A Case Study of Clinical Research Associates (CRAs) in the UK

Keywords: Working from Home, Telework, Homeworking, Clinical Trials, CRAs, Clinical Research Associates, Work Life Balance, Public, London

This study explores Working from Home (WFH) as a model of work in a public organisation in London, which operates in the clinical-trials sector. It argues that WFH is used as a strategy that offers benefits both to the organisation and its employees. WFH is offered to all Clinical Research Associates (CRAs) who work as monitors of the whole process of a clinical trial. Based on a qualitative approach, using semi-structured interviews of 29 CRAs, managers and administrative staff and secondary data, this single-case study focuses on five topics that are part of the CRAs' everyday life. These are work-life balance (WLB), cost reduction, the Information and Communications Technology (ICT) factor, the performance of the CRAs and the management of remote workers. In particular, the study identified that WFH had a positive effect on CRAs' WLB. Moreover, it argues that WFH may offer significant assistance to organisational budgets and may reduce personal expenses. It found that existing ICT could cover all employees' technological needs and reduce the requirement of managers to keep them physically present at a centralised workplace. Additionally, this thesis also identified that WFH improved CRAs' performance, whilst it also highlighted that results-oriented management was the main managerial approach towards employees who work from a distance. The key contribution of the thesis is the examination of the CRA occupation through a contemporary perspective on the WFH phenomenon.

Dedication

From Artemisia, commander of the Persian fleet and Hypatia, the great Alexandrian mathematician, to Anne Kenney and Christabel Pankhurst, seekers of social justice, and Rosalind Franklin, pioneer of the DNA discovery, to those women who dared to stand and fight; above all, to my wife who followed their legacy.

Acknowledgments

Acknowledgments are usually short and have no references. This is not the case here. The author of the current thesis, influenced by the acknowledgments of Ben-Gan et al. (2006) – IT experts who impressed him with their emotive acknowledgments section when, years ago, he was flirting with the pure positivist world of Computer Science – believes that acknowledgments need to be long and emotive. In particular, when the author submits this thesis at the age of 42, it is more than obvious that some people have supported his choice to be a mature student at this age and, as a result, all of them need to be included in this section.

The first two that I have to thank are two fighters for social justice, Professor Peter Prowse and Dr Jo McBride, my two supervisors. First, I want to thank them for their academic help; this was the help that every student wants and expects from their supervisors. Second, I want to thank them for their understanding and continuous support all these years when they successfully managed to adjust their workload to follow my unstable world. Third, and most important, I want to thank Jo McBride for her '*I have a research job that may interest you...*' as it was my first paid research work in this country at a time when the pictures of the big demonstrations in Athens were fresh in my memory and I was sending generic emails to every lecturer who has ever been introduced to me, asking for a job. Then I have to thank Professor Peter Prowse for the opportunity that I had to teach with him. It was the first sign of leadership in my career and I will eternally thank him for his offer to introduce me to the magic world of academic teaching.

The next person that I have to thank is my wife for her continuous support all these years when I had to combine work and academic research, both in a full-time mode. I want to thank her for all the lonely moments that had to pass and all the worries that she felt as I had to stay in my office fighting with the ghosts of this thesis. She is a real leader and will always be my constant source of inspiration.

The next people that I have to thank for their patience, but mostly apologise to, are my two little sons for all the denial they have suffered as daddy had to finish his book and they had to be quiet; as my older son, age six, says: *'When you finish your book, don't tell me that you have no time to play, because I will be upset'* and I feel that I now have to make that promise.

Finally, to honour my Mediterranean origin, I have to thank my mother who taught me always to want the best for me and my family. Thanks mum! Μαμά ευχαριστώ!

Table of Contents

Abstract.....	i
Dedication	ii
Acknowledgments.....	iii
Table of Contents.....	v
List of Figures	ix
List of Tables	x
Glossary of Clinical Trials.....	xi
CHAPTER 1	1
1.0 Introduction	2
1.1 Clinical Trials and Working from Home (WFH)	2
1.2 Research Objectives and Questions.....	7
1.3 Structure of the Thesis	11
CHAPTER 2	13
2.0 Literature Review	14
2.1 Introduction	14
2.2 Justification of the Current Research: Filling the Gap	15
2.2.1 The importance of Working from Home (WFH)	15
2.2.2 Identification of Research Gaps	18
2.3 Working from Home	20
2.3.1 Definition of Working from Home	21
2.3.2 The History of Working from Home.....	26
2.3.3 The WFH model and its impact on individuals, organisations and society.....	29
2.3.4 Implementing Working from Home: The Managerialist Perspective and Guideline	53
2.3.5 The technological factor: A 21 st -century insight	63
2.3.6 Working from Home: A critical perspective.....	68
2.4 Clinical Trials and Clinical Research Associates.....	79

2.4.1 Investigating Clinical Research Associates	79
2.4.2 The History of Clinical Trials	82
2.4.3 Development of a New Medicine and CRAs	86
2.4.4 The Development of the CRA Profession	89
2.5 Conclusion	92
CHAPTER 3	95
3.0 Research Methodology	96
3.1 Introduction	96
3.2 The Organisation and the Role of Researcher	97
3.3 Philosophy and Social Research	102
3.4 Research Methodology Design: The Case Study	107
3.5 Research Instruments	111
3.5.1 Semi-Structured Interviews	112
3.5.2 Observation and Secondary Data	116
3.6 Data Analysis: Grounded Theory and Thematic Approach	117
3.7 Sampling.....	122
3.8 Quality of Research Design	125
3.8.1 Validity	125
3.8.2 Reliability.....	128
3.9 The Role and Presence of the Researcher and Validity	129
3.10 Benefits and Transferability of this Research	134
3.11 Ethical Considerations.....	142
3.12 Reflections.....	143
3.13 Conclusion.....	145
CHAPTER 4	147
4.0 Data Analysis.....	148
4.1 Introduction to Data Analysis	148

4.2 Garden and the Sample’s Demographics.....	150
4.3 Working from Home and Life Balance	159
4.3.1 The enjoyment of Working from Home: Making my Life Easier and Less Complicated	159
4.3.2 Being Flexible with Work Benefits my Family as Well	166
4.3.3 Feeling Lonely and Isolated.....	173
4.3.4 Working from Home Is not for Everyone	178
4.3.5 Working from Home and Work-Life Balance: An Overall Evaluation	182
4.4 Working from Home as a Model to Reduce Costs.....	193
4.4.1 Working from Home as an Organisational Strategy	193
4.4.2 Working From Home and Family Budgeting	201
4.5 The Machines in Human Service: We Work from Home Because We Can	204
4.6 Employees’ Performance	214
4.7 ‘How do they know that you work?’: a managerial perspective	225
4.8 Conclusion.....	240
CHAPTER 5	246
5.0 Discussion.....	247
5.1 Research Sub-question 1: Are CRAs Happy to Work from Home?	247
5.2 Research Sub-question 2: Is WFH economically beneficial for both Garden and CRAs?	253
5.3 Research Sub-Question 3: Is There Sufficient Technology to Support the Virtual Office?	258
5.4 Research Sub-question 4: How is the performance of home-based CRAs evaluated?	263
5.5 Research Sub-Question 5: Is There a Difference in Management and Supervision as a Result of Lack of Direct Supervision?.....	266
5.6 Clinical Research Associate: A Career Job.....	274
5.7 Generalisability of the Findings and Limitations of the Study	276
5.7.1 Technology and Cost Reduction: The Most Generalisable Results.....	277

5.7.2 Generalisability and Work-Life Balance, Performance and Management: Scientific Contribution and Limitations	279
5.8 Realism, Grounded Theory and Working from Home	283
5.9 Conclusion.....	286
CHAPTER 6	288
6.0 Conclusion.....	289
6.1 Introduction	289
6.2 A Research Summary	289
6.3 An Agenda for Further Research.....	294
References	301
Appendices.....	334
Appendix 1: Main Sources of Literature Review Chapter.....	334
Appendix 2: Critical Research Literature on WFH.....	350
Appendix 3: The Nuremberg Code.....	355
Appendix 4: Monitor’s responsibilities	357
Appendix 5: Guideline for semi-structured interviews.....	360
Appendix 6: Study Information Sheet.....	370
Appendix 7: Interview Consent Form	371
Appendix 8: Top Jobs in Public Sector and Salaries	372

List of Figures

Figure 1: Number of Registered Studies	3
Figure 2: Clinical Trials Route	88
Figure 3: Garden’s Organisational Structure	101
Figure 4: Summary of Most Significant Findings about Work-Life Balance.....	188
Figure 5: Do you prefer working from home or office and why?	189

List of Tables

Table 1: Research Objectives and Questions.....	10
Table 2: Types of flexible working.....	21
Table 3: Costs of Technology Resources Available for Telecommuters	64
Table 4: Important Milestones of ICT history	67
Table 5: Themes for Discussion.....	94
Table 6: Sources of Evidence	112
Table 7: A Comparison of Types of Interviews	114
Table 8: Validity and Tactics.....	126
Table 9: Misunderstandings about case study	135
Table 10: Summary of CRAs' Duties (Garden's CRA manual)	150
Table 11: Details of the CRAs	153
Table 12: CRAs' working experience.....	155
Table 13: Demographic Data of the CRAs.....	156
Table 14: CRAs' Working Experience	157
Table 15: Management Team	158
Table 16: Demographic profile of those who mentioned loneliness and/or isolation as a characteristic of WFH.....	174
Table 17: CRAs' experience.....	186
Table 18: Time for Commuting from Home to Garden	192
Table 19: Performance – Summary of findings.....	225
Table 20: Tools for Micro-Management	229
Table 21: How much bandwidth does Skype need?.....	233
Table 22: Frequency of communication between CRAs	237
Table 23: The Most Important Findings of All Five Research Sub-Questions.....	244

Glossary of Clinical Trials

(The glossary is based on International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use, 1996: 2-8 and Medicines and Healthcare products Regulatory Agency, 2012: 509-520)

Approval (in relation to Institutional Review Boards) - The affirmative decision of the IRB that the clinical trial has been reviewed and may be conducted at the institution site within the constraints set forth by the IRB, the institution, Good Clinical Practice (GCP) and the applicable regulatory requirements.

Audit - A systematic and independent examination of trial-related activities and documents to determine whether the evaluated trial-related activities were conducted, and the data were recorded, analysed and accurately reported according to the protocol, sponsor's standard operating procedures (SOPs), Good Clinical Practice (GCP) and the applicable regulatory requirement(s).

Audit Trail - Documentation that allows reconstruction of the course of events.

Case Report Form (CRF) - A printed, optical, or electronic document designed to record all the protocol-required information to be reported to the sponsor on each trial subject.

Clinical Trial/Study - Any investigation with human subjects intended to discover or verify the clinical, pharmacological and/or other pharmacodynamic effects of an investigational product(s) and/or to identify any adverse reactions to an investigational product(s) and/or to study absorption, distribution, metabolism and excretion of an investigational product(s) with the object of ascertaining its safety and/or efficacy. The terms 'clinical trial' and 'clinical study' are synonymous.

Clinical Trial/Study Report - A written description of a trial/study of any therapeutic, prophylactic, or diagnostic agent conducted with human subjects, in which the clinical and statistical description, presentations and analyses are fully integrated into a single report

Compliance (in relation to trials) - Adherence to all the trial-related requirements, Good Clinical Practice (GCP) requirements and the applicable regulatory requirements.

Contract Research Organisation (CRO) - A person or organisation (commercial, academic, or other) contracted by the sponsor to perform one or more of a sponsor's trial-related duties and functions.

Essential Documents - Documents which individually and collectively permit evaluation of the conduct of a study and the quality of the data produced

EUDRACT (European Union Drug Regulating Authorities Clinical Trials) - The European database of clinical trials established in accordance with Directive 2001/20/EC

Good Clinical Practice (GCP) - A standard for the design, conduct, performance, monitoring, auditing, recording, analysis, and reporting of clinical trials that provides assurance that the data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial subjects are protected.

Investigational Medicinal Product (IMP) - A pharmaceutical form of an active substance or placebo being tested, or used, as a reference in a clinical trial, including products already with a marketing authorisation but, for the purposes of the trial, used or assembled (formulated or packaged) in a way different to the authorised form, or when used for an authorised indication, or when used to gain further information about the authorised form.

Independent Ethics Committee (IEC) - An independent body (a review board or a committee, institutional, regional, national, or supranational), constituted of medical professionals and non-medical members, whose responsibility it is to ensure the protection of the rights, safety and well-being of human subjects involved in a trial and to provide public assurance of that protection by, among other things, reviewing and approving/providing favourable opinion on the trial protocol, the suitability of the investigator(s), the facilities, methods and material to be used in obtaining and documenting informed consent of the trial subjects. The legal status, composition, function, operations and regulatory requirements pertaining to Independent Ethics Committees may differ among countries, but should allow the Independent Ethics Committee to act in agreement with GCP as described in this guideline.

Informed Consent - A process by which a subject voluntarily confirms his or her willingness to participate in a particular trial after having been informed of all aspects of the trial that are relevant to the subject's decision to participate. Informed consent is documented by means of a written, signed and dated informed-consent form.

Inspection - The act by a regulatory authority(ies) of conducting an official review of documents, facilities, records and any other resources that are deemed by the authority(ies) to be related to the clinical trial and that may be located at the site of the trial, at the sponsor's and/or contract research organisation's (CRO's) facilities, or at other establishments deemed appropriate by the regulatory authority(ies).

Investigational Product - A pharmaceutical form of an active ingredient, or placebo, being tested or used as a reference in a clinical trial, including a product with a marketing authorisation, when used or assembled (formulated or packaged) in a way different from the approved form, or when used for an unapproved indication, or when used to gain further information about an approved use.

Investigator - A person responsible for the conduct of the clinical trial at a trial site. If a trial is conducted by a team of individuals at a trial site, the investigator is the responsible leader of the team and may be called the principal investigator.

Investigator's Brochure - A compilation of the clinical and nonclinical data on the investigational product(s), which is relevant to the study of the investigational product(s) in human subjects

Medicines and Healthcare products Regulatory Agency (MHRA) - The Medicines and Healthcare products Regulatory Agency (MHRA) is the UK government agency responsible for ensuring that medicines and medical devices work and are acceptably safe. The MHRA is an executive agency of the Department of Health and was established in April 2003 from a merger of the Medicines Control Agency and the Medical Devices Agency.

Monitoring - The act of overseeing the progress of a clinical trial and of ensuring that it is conducted, recorded and reported in accordance with the protocol, Standard Operating Procedures (SOPs), Good Clinical Practice (GCP), and the applicable regulatory requirement(s).

Monitoring Report - A written report from the monitor to the sponsor after each site visit and/or other trial-related communication according to the sponsor's SOPs.

Protocol - A document that describes the objective(s), design, methodology, statistical considerations and organisation of a trial. The protocol also usually gives the background and rationale for the trial, but these could be provided in other protocol-referenced documents. Throughout the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (1996) guideline, the term 'protocol' refers to protocol and protocol amendments.

Protocol Amendment - A written description of a change or changes to, or formal clarification of, a protocol.

Quality Assurance (QA) - All those planned and systematic actions that are established to ensure that the trial is performed and the data are generated, documented (recorded) and reported in compliance with Good Clinical Practice (GCP) and the applicable regulatory requirement(s).

Quality Control (QC) - The operational techniques and activities undertaken within the quality-assurance system to verify that the requirements for the quality of the trial-related activities have been fulfilled.

Regulatory Authorities - Bodies having the power to regulate. In the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (1996) guideline the expression 'Regulatory Authorities' includes the authorities that review submitted clinical data and those that conduct inspections. These bodies are

sometimes referred to as competent authorities. The Regulatory Authority in the UK is the MHRA.

Serious Adverse Event (SAE) or Serious Adverse Drug Reaction (Serious ADR) - Any untoward medical occurrence that at any dose:

- results in death;
- is life-threatening;
- requires in-patient hospitalisation or prolongation of existing hospitalisation;
- results in persistent or significant disability/incapacity; or
- is a congenital anomaly/birth defect

Source Data - All information in original records and certified copies of original records of clinical findings, observations, or other activities in a clinical trial necessary for the reconstruction and evaluation of the trial. Source data are contained in source documents (original records or certified copies).

Source Documents - Original documents, data and records (e.g., hospital records, clinical and office charts, laboratory notes, memoranda, subjects' diaries or evaluation checklists, pharmacy dispensing records, recorded data from automated instruments, copies or transcriptions certified after verification as being accurate copies, microfiches, photographic negatives, microfilm or magnetic media, x-rays, subject files and records kept at the pharmacy, at the laboratories and at medico-technical departments involved in the clinical trial).

Sponsor - An individual, company, institution, or organisation which takes responsibility for the initiation, management and/or financing of a clinical trial.

Sponsor-Investigator - An individual who both initiates and conducts, alone or with others, a clinical trial and under whose immediate direction the investigational product is administered or dispensed or used by a subject. The term does not include any person other than an individual (e.g., it does not include a corporation or an agency). The obligations of a sponsor-investigator include both those of a sponsor and those of an investigator.

Standard Operating Procedures (SOPs) - Detailed, written instructions to achieve uniformity of the performance of a specific function.

Subject/Trial Subject - An individual who participates in a clinical trial, either as a recipient of the investigational product(s) or as a control.

Well-being (of the trial subjects) - The physical and mental integrity of the subjects participating in a clinical trial.

CHAPTER 1

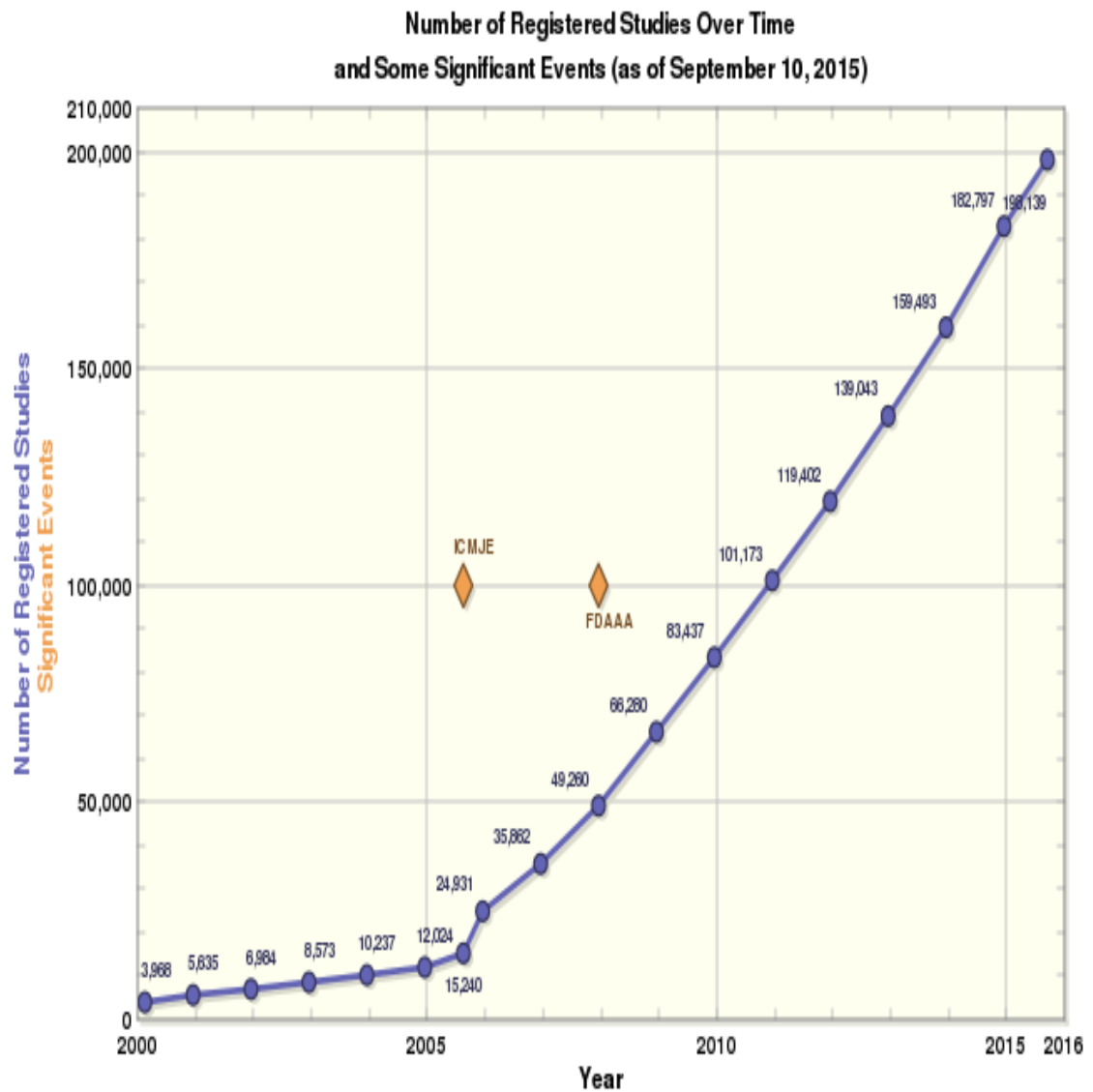
1.0 Introduction

1.1 Clinical Trials and Working from Home (WFH)

The clinical-trials sector is an expanding field of the pharmaceutical industry and is the major focus of the present research. Although evidence of medical experiments on humans exists from ancient times (Piantadosi, 2005), the structured scientific approach towards medical experimentation is a phenomenon of the second half of the 20th century. In particular, Rang et al. (1999) claimed that, until the late 1960s, most of the methods of treatment which were selected by physicians were based on their personal impression and experience rather than objectively tested criteria. Although many of the effective drugs which are still in use have never passed the tests of a controlled clinical trial (penicillin is a good example), the present legal framework requires all new drugs to be tested through the clinical-trial process before being licenced (ibid). The sector of clinical trials is an important sector of the health/pharmaceutical industry making it a significant field of academic interest. To be more precise, according to the US National Institutes of Health (2015), there are currently 198,139 registered clinical trials (some are completed and archived whilst others are active) from 190 countries (trial registration starting on 29th February 2000) whilst in 2013 were 159,493 and in 2010 were 101,173 clinical trials. This is an increase of almost 95.8 per cent in a period of 5 years. From these 198,139 studies, which have been registered in the USA, 55,346 have been conducted in Europe, of which 10,943 have been conducted in the

UK (US National Institutes of Health, 2015). Figure 1¹ shows the history of registered clinical trials according to US National Institutes of Health (2015).

Figure 1: Number of Registered Studies



Source: <https://ClinicalTrials.gov>

As with the US National Institutes of Health, the European Medicines Agency records clinical trials in the EU; the number of clinical trials recorded since 1st

¹ ICMJE: Indicates when the International Committee of Medical Journal Editors began requiring trial registration as a condition of publication (September 2005)
FDAAA: Indicates when the expanded registration requirements of FDAAA began and were implemented on ClinicalTrials.gov (December 2007)

May 2004 (when this organisation started its operation) is 44,621 as per July 2015, of which 20 per cent are non-commercial trials (European Medicines Agency, 2015). UK Clinical Trials Gateway (2016) [part of the National Institute of Health Research (the research arm of the NHS)], which aims to provide information to patients and clinicians about existing clinical trials in the UK, informs its website's visitors that there are 19,387 clinical trials which are currently recruiting. All the above show that the clinical-trials sector is an expanding sector which is globally widespread. This enormous increase in the number of conducted clinical trials is an important factor that would make a researcher become interested in investigating this sector as research in employees who participate in clinical trials has never been conducted previously. In particular, CRAs who have a key role in the process, and have not been part of research in this field previously, will be examined. CRAs are the trained personnel who are involved in the process of monitoring the whole process of a clinical trial. The British regulatory authorities' guideline defines '*monitoring*' as:

'...an activity of overseeing the progress of a clinical trial and of ensuring that it is conducted, recorded and reported in accordance with the protocol, written procedures, good clinical practice (GCP) and applicable regulatory requirements' (Medicines and Healthcare products Regulatory Agency, 2012: 17)

The CRAs, who represent the sponsor of a clinical trial (the sponsor of a clinical trial can be a pharmaceutical, non-governmental or public/academic organisation), play an important role in the development of a new treatment or medicine. As a result of their importance, when clinical trials are conducted, it is imperative that they are the focus of academic research. However, as mentioned above, CRAs have not been investigated in depth by other researchers. Even the Office for National Statistics (2015a) does not record

CRAAs as a separate profession. This thesis aims to fill that gap of knowledge as it is the first research that provides an in-depth single-case study focusing on this profession in the UK. Although every clinical trial in the UK has the ethical and legal obligation to publish its results (The Parliamentary Office of Science and Technology, 2014), there are very few academic articles which study the staff involved in the process of the clinical trials; this is a gap that this research aims to fill. It is common for the non-medical published research of the clinical-trials sector to focus on ethics [for example Silva et al. (2016), Cook and Hoas (2015), Hedgecoe (2014), Altavilla et al. (2009) and Emanuel et al. (2008) or on methodological aspects [for example Carr et al. (2012a) and Johnson (2014)], but not on aspects of Human Resource Management (HRM). To be more specific, the researcher of this thesis managed to find only one academic report (Tufts Center for the Study of Drug Development Impact Report, 2012) which focuses on aspects of the CRAAs' conditions of work with an emphasis on aspects such as Work-Life Balance (WLB) and workload. This significant omission in literature gave the researcher of the current thesis the opportunity to focus his research on this sector and this important occupation. An extensive investigation of the sector of clinical trials and the role of the CRAAs will follow in the Literature Review chapter.

The second field that the current research explores is the pattern of WFH. WFH was chosen, among all types of flexible working arrangements, as a model of work which plays a significant role in the development of the contemporary working environment. There is evidence from literature (Ruiz and Walling, 2005; Trades Union Congress, 2015a) that WFH becomes popular among organisations and as a result of this expansion, is very often a mode of work

which attracts the interest of social scientists. As with clinical trials, the discussion around WFH as a model of work which was adopted by many organisations is relatively recent. Indeed, the academic investigation starts from the fourth quarter of the 20th century and Nilles's (1975) work about telecommuting. Since then, many empirical studies (Kurland and Bailey, 1999; Duxbury and Higgins, 2002; Kitou and Horvath, 2003; Collins, 2005; Golden, 2006; Martínez-Sánchez et al., 2007; Vermaas and Bongers, 2007; Gajendran and Harrison, 2007; Redman et al., 2009; Harker-Martin and MacDonnell, 2012) have illustrated the benefits of WFH for employees, organisations and society. A significant part of these benefits is examined in this research with the emphasis being on those benefits which apply both to the CRAs and the employer. However, it is not only the advocate literature that is examined; important critical literature is presented in the Literature Review chapter. Aspects of WFH literature, such as gender and space issues (Sullivan, 2000), reduced pay (Felstead et al., 2001), problematic career development (Collins, 2005), long working hours (Peters and Van der Lippe, 2007; Dimitrova, 2003), managerial problems caused by lack of presence (Felstead et al., 2003) and isolation (Lai and Burchell, 2008) are topics which are examined through the CRAs' perspective. Although WFH is not a new idea, and many of the topics which are examined in this research have also been examined by other researchers in the past, the increased use of technological innovations such as broadband internet (OECD, 2012) and mobile phones (Ofcom, 2015) or the current stagnant economic environment (Pollin, 2013) and its influence in the WFH model of work, are important factors to make a researcher search for a contemporary insight into this pattern of work. This research combines two

innovative worlds, the clinical-trials sector and WFH, seeking to explore the collaboration between them and the harmonies and weaknesses that their coexistence creates for employees and organisations which operate in the competitive working environment of London.

1.2 Research Objectives and Questions

The overall objective of this research is to have an in-depth investigation of WFH through an important occupation such as that of the CRA. The first aim is to examine this occupation which has a significant role in the development of new drugs and therapies. The second aim is to investigate whether WFH operates in a satisfactory way for both employees and employers and, as a result, can be further adopted by other organisations and/or sectors. Therefore, the research aims to examine if the results may be generalisable for other companies in order to examine whether WFH is a suitable mode of work that they could consider adopting. A more in-depth analysis of the generalisability of the research will follow in the Research Methodology chapter.

This evaluation of this remote mode of work is based on 5 components of CRAs' everyday working lives. Indeed, this case study tries to address the 'how' and 'why' questions, a target very common within case studies (Yin, 2014). In other words, it looks at how and why CRAs operate as they do. In particular, the effects of Work-Life Balance (WLB), Cost Reduction, ICTs and their implications, Performance and Management/Supervision have been chosen as 5 significant themes on which the evaluation of the WFH phenomenon will be based. Starting with WLB, the first research sub-question will focus on the

CRAs' overall quality of life. The rationale behind the decision to focus on WLB is that there is a need to explore whether the protagonists of the WFH mode of work are happy to work from home. Before suggesting to other companies that they should adopt telework policies, we must have a clear picture of the influence that WFH may have in employees' personal lives. The second sub-question focuses on the reduced costs which result from WFH in an era when organisations and people have to learn to operate in an environment in which austerity economics is the predominant school of thought on both sides of the Atlantic (Pollin, 2013). In this environment, where, generally, austerity refers to cutting back on spending (mainly but not only by the state) (Konzelmann, 2014), trying to develop a financial beneficial situation, such as WFH, for both employees and employers is more necessary than ever. Generally, the economic downturn in Europe has created the need for organisations to rethink work design and delivery and to search for new forms of work (Kamerade et al., 2013). Indeed, Kamerade et al. (2013) describe the modern working environment which increases the need for using flexible work arrangements, particularly WFH. They state:

'HbTW [Home-based Teleworking] is emerging as a new way to work in Europe as organisations and individuals face a number of challenges. Space is at a premium and demands a high cost and this is a driver for organisations to seek alternative locations for work. Recession, economic downturn, public service expenditure cuts and welfare reform throughout Europe has also led individuals to seek flexible working with HbTW seen as an available and attractive alternative to working in an office' (Kamerade et al. 2013: 261)

In addition, literature suggests that downsizing is regarded by many managers as one of the preferred methods of reducing costs globally (Wilkinson and Redman, 2013) and it is exactly this need to reduce costs that this sub-question focuses on. The virtual office is investigated as an alternative way to obtain a

significant improvement in the financial status of both employees and employer by sending people home (for a good reason!). The third research sub-question focuses on the ICT factor. Although the researcher and the overwhelming majority of the sample of this research cannot be considered as experts in technology, the idea is to discover if the existing ICT infrastructure can support a virtual office. Even though the idea of having knowledge workers working from home is a relatively developed concept (Nilles, 1975), there are many changes which have seen a significant part of the literature become dated as a result of technological innovation. To give an example, according to a report conducted by the European Commission (1998), that year's number of PCs and internet users per 100 UK residents were 21 and 9.5 respectively, whilst the percentage of UK households which had internet access was 7.9. That reality seems very distant today and thus the need to have a fresh view of today's technical environment is important. From another point of view, Neirotti et al. (2013) consider that two important pillars of the expansion of the telework phenomenon (herein the definition focuses mainly on mobile work and not so much on WFH) in Italy, from 2005 to 2009, were a decrease in the cost of broadband internet and an increased availability of the standardised enterprise information systems. Therefore, as technological factors have changed significantly in recent years, many of the topics which were expressed in the WFH literature need to be re-examined. Thus, the key question is about existing technology and whether the current technological advancements can offer smooth operation of everyday employees' tasks remotely. In other words, is there sufficient technology to support WFH?

The fourth research sub-question focuses on the performance of home-based CRAs. In particular, the emphasis is on what CRAs think about themselves and how they compare their current home-based role with previous office-based roles. In addition, another insight into the CRAs' performance will be given by their managers; managers will be asked to evaluate the performance of their subordinates.

Finally, the fifth research sub-question examines the peculiarities in management and supervision that WFH and the non-visibility of employees can create, if any. In other words, is there a problem when the management cannot physically see the employee in the workplace?

Taking all these sub-questions into account, Table 1 summarises all precedent research objectives and questions.

Table 1: Research Objectives and Questions

Main Research Objective	
Evaluation of WFH as a mode of work through the occupation of CRA	
Research Sub-questions	
1. Work-Life Balance	CRAs quality of life: Are CRAs happy to work from home?
2. Cost Reductions	What economic benefits (if any) do CRAs and the employer gain by implementing WFH policies?
3. ICT Implications	Is there sufficient technology to support the virtual office?
4. Performance	How good is the performance of home-based CRAs? Evidence from both CRAs and managers
5. Management/Supervision	Is there a difference in management/supervision as a result of the lack of direct supervision?

Having defined the key aspects that this research aims to explore, the next section will focus on the structure of the thesis.

1.3 Structure of the Thesis

This thesis is organised into six chapters. A brief overview of these chapters is presented below.

Chapter 1 introduces the reader to the two important frameworks on which the research will focus: the clinical-trials sector and the CRAs as a key profession in the field of the clinical-trials sector; and WFH as an important pattern of contemporary flexible working arrangements. It presents the aims and objectives of the research and provides an overview of the whole thesis.

Chapter 2 focuses on the Literature Review where, again, the structure is divided into two parts. The first part contains the sections which describe the main topics around WFH literature, whilst the second focuses on the description of the characteristics of the clinical trials and the CRAs.

Chapter 3 includes the methodology used in the research. The research methodology design is a single-case study based on a public organisation which operates in London. The research focuses on CRAs in a qualitative study undertaken between January 2014 and June 2014. Semi-structured interviews were the main source of data generation and were conducted with the CRAs and their management team.

Chapter 4 includes analysis of the data collection/generation process. It is separated into five themes (Work-Life Balance, Cost Reduction, ICTs and their implementation, Performance and Management/Supervision), analysed using thematic analysis. These five themes are the main fields of interest of the research. First, the research focuses on the Work-Life Balance (WLB) of the CRAs to examine if these home-based employees are happy with this model of work. Second, the research investigates the financial benefit for both employees and organisation. Third, the thesis investigates the use of IT by CRAs to test whether there is sufficient technology to support the remote work. Fourth, the performance of the CRAs is examined; both CRAs and managers evaluate CRAs' performance when working from home. Finally, the research investigates whether the lack of presence may create problems in management and supervision between CRAs and their management team.

Chapter 5 contains critical discussion of the findings of the research which is combined with the topics mentioned in the Literature Review chapter. Every topic which was investigated in the Data Analysis chapter is compared with earlier findings from more than 41 years of WFH literature. An overview on the generalisability and the scientific contribution of the research is included.

Chapter 6 provides conclusions and an overall evaluation of the research, whilst the chapter ends with the topics which need further investigation.

CHAPTER 2

2.0 Literature Review

2.1 Introduction

The current chapter is divided into two parts in order clearly to delineate both Working from Home (WFH) and Clinical Research Associates (CRAs). The first part puts the emphasis on the existing WFH literature, whilst the second part focuses on the profession of CRAs.

The section emphasising WFH covers all main aspects of more than 41 years of WFH literature and is divided into two further sections. In the first section, WFH's overall beneficial role is presented with emphasis given to the employee, the employer and society in general. A description of the managerial agenda and the latest IT advancements offers an additional insight into the phenomenon. The second section summarises the critical literature on the WFH phenomenon. In particular, as WFH's presence is expanding, an increasing number of academics focus on the negative influence it has on the employee and this is what it is addressed in this section.

The second part of the Literature Review focuses on CRAs who are involved in a particularly regulated field. Their unique job tasks can classify them among high specialised professions. The bureaucratic nature of their job [where according to Mintzberg (2004), bureaucracy is an environment which is characterised by formalisation and centralisation], the legal and ethical regulations and the project and strict deadline-oriented environment in which they operate may offer the opportunity to add new dimensions to the existing WFH literature.

This Literature Review chapter is based mainly on academic research. Very few papers were used from non-academic sources such as governmental reports and reports from research and/or commercial organisations. Journalistic sources, or companies' reports and websites, were used only to add knowledge to topics such as recent trends or IT developments when there is an absence of academic work. The analysis begins by explaining why WFH is a subject that needs to be further investigated.

2.2 Justification of the Current Research: Filling the Gap

2.2.1 The importance of Working from Home (WFH)

Felstead and Jewson (2000)² provide a long list of topics to justify why home-located production is such a significant research subject for social scientists. In particular, they mention that 'home' and 'work' are two key issues of contemporary social life which together with aspects as the global expansion of the number of homeworkers and mass access to the internet, can provide significant reasons for investigating the phenomenon. To give some examples, according to Felstead and Jewson (2000), important topics that attract academic interest include the large shift to flexible and 'non-standard' forms of employment, work satisfaction and improved family relations, problems which may be raised as a result of the combination of the '*two worlds* [work and home]

² Felstead and Jewson (2000:1) use the term '*home-located production*' to cover the whole range of occupations, both manual and white-collar, which are performed by people '*who are in work at home*'.

in one', gender issues and managerial stereotypes that perceive homeworking as problematic. More topics include trade unions' concerns, societal issues such as architectural and urban and rural design and planning, employment law, transportation, electronic infrastructure, commercial property values, health and safety and finally the fact that aspects of homeworking are still confused and under-researched (Felstead and Jewson, 2000). Although significant changes have influenced the workplace since their research, many of these aspects are still relevant and worthy of exploration. In more recent research, Fonner and Stache (2012) claim that teleworkers are still considered an understudied population for social scientists. Therefore, further research is needed to add knowledge of the WFH phenomenon as new trends, innovations, changes in the global economic situation and environmental changes come to influence the argumentation of WFH users, policy-makers, researchers and business analysts. The current economic climate of austerity and continuous technological innovation are two important factors that may influence working conditions. For example, new IT implementations, such as the use of video-conferencing and outlook-share calendars, may have changed traditional perspectives of communication and supervision. The stereotypes of presence-and-visibility-based types of management (Felstead et al., 2003) and the shift from this type of close supervision to styles of control based on positive reinforcement and result-management (Peters and Van der Lippe, 2007) need to be examined. For instance, Gajendran and Harrison (2007) suggest that managers of teleworkers judge performance based on output and not on observable activities. The constant increases in transportation expenses, or in childcare costs, are additional factors that need to be evaluated to have a more

contemporary view of the WFH phenomenon and the new organisational and individual needs that are linked to it. Furthermore, the cost of UK travel such as rail-ticket prices in London and the South East have increased 62.4% during the period from January 2004 to January 2015, whilst for the same period of time and the same sector, the real-terms change (i.e. including inflation change) in the average price is 16.4 per cent (Nair, 2015). In addition to this steep increase in rail fares, many of the employees face a significant high cost in childcare. The UK is the second most expensive country among OECD countries for childcare as a percentage of the average wages of a dual-earner family (Rogers, 2012). A more recent survey shows that the British average cost for a child under two is £212.09 for a nursery (for a full-time 50 hours per week) and £196.55 for a childminder, whereas in London the costs are significantly higher with the weekly costs reaching £283.66 and £269.44 respectively (Rutter, 2015). Generally, the cost of nurseries has increased 59 per cent and the cost of childminders by 58 per cent since 2006, whilst real wage growth has remained static for the same period of time (ibid). Although, until recently, reducing costs was not the primary reason for employees to work from home (Overmyer, 2011), the rising cost of living and stagnant salaries in the current economic climate may have changed the order of needs that WFH covers. All these aspects that may influence our idea of what constitutes work, family and society are arguably a good starting point for a research study focusing on homeworking.

To sum up, the current difficult economic climate of austerity and the continuous new technological innovations are two extremely significant factors that have the potential to change the working conditions of a significant part of the British

workforce. Therefore, they are viewed as important and it is considered that they should be examined. Indeed, there have been many changes since Nilles (1975) introduced the discussion about flexibility of space (telecommuting) and this project is viewed as an important opportunity to update some basic concepts of WFH literature.

CRA, the second important component of the current research will be presented later in Section 2.5. The following section emphasises the identification of the research gaps that this research tries to cover. Before presenting the main topics of WFH and the clinical-trials sector, there is a need to examine the unexplored or outdated themes of more than 41 years of literature and the aims which are defined in the research objectives and questions.

2.2.2 Identification of Research Gaps

There is a significant body of literature that focuses on WFH. Its main concepts, presented in greater depth later in this chapter, cover a significantly wider range of themes. The literature gaps that this research aims to address are linked to the current unstable economic climate and the CRA as an interesting profession to explore. A significantly large part of the WFH literature has relied on data from organisations and employees that have been generated in times of economic stability and growth. Therefore, academics expressed their opinions about specific aspects of WFH under economic circumstances that no longer exist. Organisations aim to survive in a very unstable global environment and WFH can be an option for those who seek flexibility as a means of survival. This

research aims to contribute to the existing literature as an update of past WFH research in a very different economic climate, one of austerity. In particular, it is important in introducing significant data concerning aspects of reducing costs, and management, supervision and implementation of IT. The exponential technological change in the Information and Communication Technology (ICT) sector is another factor which has significantly influenced the WFH phenomenon over the years. As will be analysed later, new software and hardware have significantly changed the reality of the workplace, abolishing old WFH concerns and creating new types of literature. Generally, the stagnant economic environment and the significant technological changes in the workplace are perceived as two good starting points for creating a contemporary insight into the WFH phenomenon.

In terms of addressing research gaps from the CRAs' perspective, this research aims to explore the working life of an important group of professionals that have a significant role in the innovation of new medicines. There is limited literature about CRAs, particularly their working conditions, whilst according to the researcher's knowledge, there is no literature that focuses solely on CRAs in Britain, particularly 'home-based' CRAs. The most important aim of the current research is to contribute knowledge to fill this gap and to introduce empirical data concerning aspects of working reality. As will be presented later, the main contribution of the current research is the in-depth presentation of the occupation of the CRA. Concerning WFH themes, although the majority of the topics which will be presented in the following section are not new in the research agenda of social scientists, it is the new working conditions which need to be updated. Many of the topics which were presented by Felstead and

Jewson (2000), highlighted in the previous section as typical researchers' fields of interest, need to be investigated with a fresh insight. For example, as mentioned earlier, Overmyer (2011) suggested that saving costs was not, until recently, a primary reason for an employee to want to work from home. However, the exponential increase in the cost of living in London and the current austerity-led economic environment may have changed the priorities of employees. Although this research does not claim to focus on the general changing working environment and on how this is linked with WFH, it does claim to analyse some aspects of the everyday life of professionals who work in a new, different reality in London. In particular, the re-examination of the WFH phenomenon contains many recurrent topics of WFH literature, such as cost reduction (Kurland and Bailey, 1999; Hilbrecht et al., 2013), management and supervision drawbacks (Dimitrova, 2003) or the IT implications of a continuously advancing technology (Duxbury and Higgins, 2002; Pyöriä, 2011), albeit in a different and more contemporary social framework. However, before presenting the main topics of the WFH literature, there is a need to explain the rationale behind the decision to choose this literature. Hence, the following section will focus on the objectives and questions that this research aims to explore.

2.3 Working from Home

WFH is a type of flexible working arrangement. Reilly (2001) summarised all types of flexible working (see Table 2) and added definitions/aims and examples of each type. From Table 2 it can be surmised that research based on WFH belongs to the '*locational*' type of flexibility and this type will be the focus

of this research. The presentation of flexibility of space (i.e. WFH) starts with the next section's definition of the phenomenon. It is important to highlight the types of flexibility of space that exist in literature as academics do not use a unique way to define WFH.

Table 2: Types of flexible working

Type	Definition/aims	Examples
Functional	Allows firms to allocate labour across traditional functional boundaries.	Multi-skilling, cross-functional working, task flexibility.
Numerical	Allows variation in the number of employees or workers used.	Temporary, seasonal, casual, agency, fixed-term workers, outsourcing.
Temporal	Represents variability of working hours, either in a regular or irregular pattern.	Part-time, annual hours, shift, overtime, voluntary reduced hours, flexitime, zero hours arrangements.
Locational	Involves using employees outside the normal workplace, including transfer of work to back offices.	Home, mobile, tele/outworkers.
Financial	Allows paybill to rise and fall in line with corporate performance.	Gainsharing, profit sharing, variable executive pay schemes, wage-cutting deals.

Source: Reilly, 2001: 28

2.3.1 Definition of Working from Home

More than 41 years ago, in the USA, Nilles was the first to introduce the term 'telecommuting' to define telework (Nilles, 1975). This was on 1973 during the period of a steep increase in the price of oil, which created the impetus to search for new ways to save energy, and Nilles discussed how this could

technically happen (Nunes, 2005) as the use of computers made information work portable (Dimitrova, 2003). Generally, the oil crisis of the 1970s made researchers consider telecommuting as an alternative way of reducing commuting (Haddon and Brynin, 2005). Di Martino and Wirth (1990) highlighted that telework (herein the definition includes WFH among other forms of telework) was 10 years old, whilst Schmidt and Duenas (2002), in their paper about incentives – including telecommuting (WFH) arrangements – and their contribution to the productivity of employees, stated that telecommuting arrangements became popular in the USA with the growth of the use of Personal Computer (PC) in the 1980s. In the UK, de Menezes and Kelliher (2011) recognised the mid-1970s as the starting point of researchers' interest in the outcome of flexible working arrangements. It seemed that flexibility became an important topic of academic interest as it '*has become ubiquitous in business and political discourse in recent years*' (Kelliher, 2013: 578). Furthermore, the development of the internet in the early 1980s, and its commercialisation and popularisation in the 1990s (Vega, 2003), offered a significant boost to the promotion of remote working among white-collar employees. Generally, as economic, technological and social changes have increased the spatial mobility of workers, liberating them from the need always to work in a specific place (Hislop and Axtell, 2007) the remote-work phenomenon increased. The need for the 8am to 5pm '*factory world*' and the 9am to 5pm '*office world*' has been abolished and replaced by '*a complex flexi-place, flexi-time world*' (Bratton and Gold, 2012).

A general, globally accepted, definition of WFH and telework does not exist in the literature and very often definitions depend on the subject that is being

investigated (Sullivan, 2003). For example, as a result of Nilles's work, the term '*telecommuting*' is still used in US literature, particularly when authors want to focus on influences of telework on transportation (Sullivan, 2003). Hence, the appearance of this term in the current research can be considered as strong evidence that the source of information is US literature. Indeed, Nilles (1975), in his first and very influential work about suggested methods of decentralisation of organisations, explains what a '*telecommuting*' network is:

'A telecommuting network has computational and telecommunications components which enable employees of large organisations to work in offices close to (but generally not in) their homes, rather than commute long distances to a central office.' (Nilles, 1975: 1143)

Although Nilles (1975), at this point, advises companies to have employees mainly at external workstations, near their homes, later on in his paper, when he presents the '*Diffusion*' model of organisation, he recognises that companies may use home-based employees in their network of employees. Another effort to define WFH originated from the British national statistical service. In particular, in 1997, the UK Office for National Statistics (ONS) described telehomeworkers of the Labour Force Survey (LFS) as teleworkers who work at home or use home as base at least once per reference week and who use a telephone and a computer; this definition was a key factor in separating telehomeworkers from other homeworkers because of telehomeworkers' use of Information and Communication Technologies (ICTs) (Sullivan, 2003). However, this '*at least once per week*' expression reveals another factor of the definition problem, that of time. To be more specific, many researchers find it difficult to study telework as teleworkers in various studies spend varying time working outside organisational premises (Neirotti et al., 2013). Indeed, Information Technology is an important characteristic of modern telework to

such a degree that, very often, critical literature introduces teleworkers as ‘e-slaves’ (Taskin and Edwards, 2007). Another approach to defining working away from the company’s headquarters is given by the European Union; according to the EU framework voluntary agreement on telework of 16th July 2002, telework can be defined as:

‘...a form of organising and/or performing work, using information technology, in the context of an employment contract/relationship, where work, which could also be performed at the employer’s premises, is carried out away from those premises on a regular basis’ (Europa, 2005:1)

This definition was adopted by most of the member countries in their national legal frameworks or their social-partners agenda (Blanpain, 2007a).

Instead of giving more examples of various authors using various definitions of WFH, or of employees generally working away from companies’ premises, it is important to demonstrate that teleworkers cannot be perceived as a single and homogeneous group of people (Wilks and Billsberry, 2007; Vayre and Pignault, 2014; Tietze, 2002). Indeed, very often, different authors use different terminology such as ‘telework’, ‘home-based work’, ‘homeworking’, ‘computer-aid work’, ‘home production’, ‘flexible work’ and ‘virtual work’ to describe the same phenomenon (Tietze et al., 2009). For example, Harker-Martin and MacDonnell (2012) suggest that they use the terms ‘telecommuting’ and ‘telework’ to describe the same phenomenon. They state:

‘For the purposes of this paper, the terms telework and telecommuting will be used interchangeably as is accepted practice in this area of research.’ (Harker-Martin and MacDonnell, 2012: 603)

In the present Literature Review chapter, the author uses the terminology that authors use in their published work. Even though there are some significant efforts to unify and standardise terminology, as in the aforementioned efforts of

the ONS in the UK in 1997 or the EU framework voluntary agreement on telework in 2002, telework literature still does not use common definitions. Tietze et al. (2009) have identified that, very often, authors of telework literature are not clear about their own terminology. For example, authors such as Wilks and Billsberry (2007), Major et al. (2008) and Marsh and Musson (2008) use the word 'telework' in their research but in reality they research only home-based employees. Collins (2005), more than 10 years ago, signified a problem of data collection about teleworkers, which exists in different places. Collins (2005) suggested that the UK was the only country in the world that collects data about teleworkers through Labour Force Survey; he mentioned that USA also collected data with a similarly sized survey but not on a systematic basis. On the other hand, Wheatley (2012), in more recent research, points out that the exact number of workers who work from home in the UK is not known. Based on data from the British Household Panel Survey and the UK Labour Force Survey, Wheatley (2012) estimates that the percentage of people who report their home as the primary workplace (those, for example, who are self-employed and use their home as a base but not as their main workplace are not included) is 2 to 2.5 per cent of the total UK workforce. Kamerade et al. (2013), in findings based on the UK Labour Force Survey from April to June 2012, suggest that home-based teleworkers are even less prevalent. They estimate that home-based teleworkers constitute 0.5 per cent of the total British workforce, which is about 290,000 individuals. Indeed, based on the UK Labour Force Survey from April to June 2012, they give a clear description of the size and type of home-based teleworkers in the UK:

'HbTW [home-based telework] is significantly more common in the private sector (1.2%) than in the public and third sector (0.4%). This

difference is more pronounced among women, where the HbTW rate in the private sector is 1.4% and in public and third sector 0.4% [third sector is mainly charities and non-governmental organisations] compared to men where the rates are 0.9% and 0.5% accordingly. HbTW is most prevalent among higher occupations: in managerial (2.1%), administrative (1.9%) professional (1.4%) and associate professional (1.6%) occupations and considerably less – almost non-existent – in others. Amongst men, those at the top three steps of the occupational ladder are more likely to be HbTW – the higher up the hierarchy you go, the more likely you are to be a HbTW.’ (Kamerade et al, 2013: 263)

The author of the present research suggests that telework is a broad category of remote working that contains the sub-category of home-based workers, but he uses the same terminology that authors use when referencing them. As a result of this approach, different terminology appears in different parts of the Literature Review chapter as the author wants to be consistent with his sources. The next section focuses on the history of WFH strategy. Before emphasising the benefits and the drawbacks of the expansion of WFH, there is a need to present some historical data in an effort to understand the early days of the phenomenon.

2.3.2 The History of Working from Home

This section aims to give a brief picture of the presence of WFH in various places and eras globally. Although many of the topics presented are not directly linked with types of employees, such as the professionals of the clinical trials examined in this research, there is a need to present some historical data to give the reader in-depth background on this phenomenon. As described earlier, there is no common definition of WFH in the literature and this section is further proof of the different approaches towards the phenomenon around the world.

For example, the early history of WFH involves mainly manual jobs. Felstead and Jewson (2000) created a table of 249 manual professions, from seven countries (Bangladesh, Britain, India, Indonesia, the Netherlands, Portugal and Thailand), that involve homeworking activities. Very often WFH is perceived differently in different countries and cultures. For instance, in India, manual WFH is considered as a mode of job that, despite cultural obstacles, increases women's empowerment (Kantor, 2003), whilst research in four developing countries (Bolivia, India, Indonesia and South Africa) indicates that working in a home-based enterprise has the potential to be characterised as a '*decent*' type of job as it increases everyone's ability to find work and also has a positive impact on the household's income (Tipple, 2006).

However, WFH, particularly in manual jobs, was not always perceived as a positive method of work. In particular, in the USA, WFH was restricted by a very strict legal framework as it was perceived as a mode of work linked to violation of child-labour and minimum-wage regulations (Edwards and Field-Hendrey, 2002); in the early 1940s homeworking was banned in seven manufacturing industries with these restrictions imposed until 1989 (*ibid.*). In some developing countries, industrial WFH can still be linked to exploitation in terms of hours of work and/or child labour, poor health and safety conditions and concerns about insurance, pensions, holidays and the ability to join a union (Tipple, 2006). For example, evidence from Turkey suggests that, very often home-based working women, who live inside a strong patriarchal family structure, leave their labour control, in aspects such as recruiting or hiring, piece-rate setting or supervisory techniques, to male members of the family (Sarıoğlu, 2013). Felstead and Jewson (2000) suggest that homeworkers may be vulnerable to exploitation

where homeworking is about manual occupations in which workers are usually women or ethnic minorities.

On the other hand, the white-collar jobs which are linked to WFH have a very different history from the manual jobs. In the UK, telework (herein mainly home-based telework) gained academic attention in the late 1980s when initially most of the occupations involved were drawn mainly from the IT sector and later from the sectors of finance and local government (Stanworth, 1996). In particular, Thompson and McHugh (2009) suggest that, in general, ICT companies are leading the trend of telework as they have cost-cutting reasons for doing it and surveillance technology to support it. In a similar approach, evidence from a recent Canadian study suggests that companies which focus on innovation are more likely to offer telework policies and particularly employee-friendly policies (Cooke et al., 2014).

This historical data covers a small part of the WFH phenomenon within the global scale. The aim is to give an insight into the many topics included under the WFH label and to prepare the reader for the critical part of the literature that follows. In order to understand the early critical view of the feminists or the trade unionists, which will be presented later in this chapter, there is a need to present some historical data around the challenging early history of the phenomenon. However, before presenting more of the critical literature, there is a need to focus on the changes that WFH brought to both employees and organisations. In particular, the following part is divided into three sections in which the main emphasis is on demonstrating the benefits of WFH to employees, to employer and to society as a whole. The first section focuses on the organisations which have been using the WFH model.

2.3.3 The WFH model and its impact on individuals, organisations and society

This section will focus on a three-dimensional analysis of the WFH phenomenon and explore the three different perspectives that come from employer, employee and society as a whole, with emphasis given to the positive contribution of WFH in terms of all three stakeholders. The following section focuses on the benefits that WFH offers to the employers' side as these have been captured in literature.

2.3.3.1 The Labour Market Supply Perspective

One of the main reasons that public and private organisations implement WFH, or other flexible arrangements, is to improve organisational performance (Stavrou, 2005; Harker-Martin and MacDonnell, 2012; Limburg and Jackson, 2007; Martínez-Sánchez et al., 2007; Atkinson and Hall, 2011). First, one important factor that may drive organisations to adopt WFH is that this working model is positively correlated with employees' productivity (Baker et al., 2007; Mello, 2007; Duxbury and Higgins, 2002; Cascio, 2000; Huws, 1994) which is increased when remote employees are involved in creative tasks (in comparison to the opposite – reduced productivity – which happens when the tasks are dull) (Dutcher, 2012). Generally, productivity can be increased by factors such as fewer distractions, a lack of everyday meetings, working in personal 'peak' hours and increased motivation as a result of flexibility (Olmsted and Smith, 1994). A case study based on benchmark evaluation of productivity in Lloyd's Bank found that teleworkers (herein home-based) are 23 per cent

more productive than their office-based colleagues (Collins, 2005). A more recent study by Gajendran et al. (2015) suggests that telecommuting (virtual work from home) is positively associated with employees' various job tasks and contextual performance such as interpersonal facilitation and job dedication; employees who use telecommuting perform better than those who do not, whilst telecommuting intensity is positively associated with this task performance. Caillier (2014), whose study is based on data from US federal government agencies, suggests that moving from office-based employees to teleworkers increases employees' motivation. Generally, remote working (including WFH) is positively correlated with performance as perceived by both employees and supervisors (Gajendran and Harrison, 2007).

Another evidence of the beneficial link between WFH and performance originates from a Chinese company. To be more specific, an experiment conducted at Ctrip, a Chinese travel agency, which is listed in NASDAQ and employs 16,000 workers, demonstrated that employees who worked from home increased their performance and improved their job satisfaction (Bloom et al., 2015). In particular, call centre employees at Ctrip, were randomly appointed (voluntarily) to work from home or office for a specific period of time (nine months) and then their performance was compared with their office-based performance; those who worked from home had a 13 per cent increase in their performance as a result of working more time per shift (less breaks and sick leave) and of answering more calls per minute (because of a quieter and more convenient environment) compared with their office-based colleagues (ibid.). On the other hand, despite the fact that the overall turnover that came from the homeworkers halved, their promotional opportunities decreased (ibid.). Similar

results were found in another survey of a large American governmental organisation in which data were obtained from both supervisors and non-supervisors; the survey revealed that employees who teleworked performed better in creative tasks compared with office-based colleagues since the former reported higher levels of job performance and job satisfaction (Vega et al., 2015). Another recent longitudinal survey, which studied employees from Finland and Estonia, found that telework (in this particular survey telework is not WFH but working for a week from a distant office in a rural area of an archipelago) was associated with teleworkers' increase in work satisfaction and decrease in stress, time pressure, interruptions, exhaustion and negative feelings at work (Vesala and Tuomivaara, 2015).

Another factor of organisational performance which can add value to arguments advocating WFH is the reduction in absenteeism and the improvement of recruitment and retention. Generally, absenteeism can be reduced by flexible work arrangements (Atkinson and Hall, 2011) and particularly by WFH (Stavrou, 2005; Huws, 1994); teleworkers (herein includes home-based employees) are less likely to use sick leave because of minor diseases or stress (Duxbury and Higgins, 2002). Indeed, increasing hours of homeworking are negatively associated with stress and burnout (Redman et al., 2009; Sardeshmukh et al., 2012). This finding is important since there is evidence that, over the years, there has been an overall decline in job satisfaction and an increase in stress through the British labour force (Green, 2004). However, elements from a Canadian survey support the contention that the combination of home-located production and IT may increase employees' stress (Chalmers, 2008). Golden (2012) finds that exhaustion is worse for employees who extensively telework

during both standard (e.g. 8:30-17:30) and non-standard working hours and is related to high work-to-family conflict. From another critical perspective, Clark et al. (2012) claim that emotional stability is negatively related to telecommuting (herein definition includes homeworkers). In particular, they found that:

'... neurotic individuals had more favourable attitudes toward telecommuting, preferred telecommuting to conventional work, and perceived telecommuting as presenting fewer challenges than did emotionally stable individuals.' (Clark et al., 2012: 38)

On the other hand, de Menezes and Kelliher (2011: 462), in a review of the literature focusing on the link between flexible work arrangements and performance-related outcomes, claim, in a more neutral way, that *'remote working [definition includes WFH] may both relieve and create stress'*.

WFH can also expand the labour pool (Thompson and Aspinwall, 2009) by allowing managers to recruit and select from a wider nationwide base, which includes those who recover from illness, employees with commuting difficulties, or those with disabilities or dependants (Duxbury and Higgins, 2002). Thompson and Aspinwall (2009) suggest that telecommuting can positively influence potential candidates to accept a job offer. After all, the origin of all policies which may be regarded as family friendly were developed in the 1980s by HR professionals as a response to overcoming skill shortages (Lewis and Dyer, 2002). Generally, telework policies can improve the corporate image as this way the organisation is perceived as a modern and positive workplace (Pyöriä, 2011), whilst they also help to attract more qualified employees (Jaakson and Kallaste, 2010). However, because of the fact that remote working is associated with less direct supervision, the selection of appropriate staff is important (Hislop et al., 2008).

According to Harker-Martin and MacDonnell (2012) and Golden (2006), telework (herein definition includes WFH) increases retention rates and is often positively associated with employees' commitment (Harker-Martin and MacDonnell, 2012; Golden, 2006). Moreover, organisational commitment is associated with task performance and it can be significantly higher when employees have additional options (downtown or satellite office) that they can combine with their home-based office (Hunton and Norman, 2010). However, there are many studies which support the contention that flexible work arrangements help retention rates; for example, a meta-analysis of 46 studies (home is the main workplace in almost all these studies) suggests that telecommuting is positively associated with turnover intent (Gajendran and Harrison, 2007). It needs to be noted here that very often the evidence relies on subjective, not objective, measurement (de Menezes and Kelliher, 2011).

Overall, flexible working (including WFH) has a positive association with organisational commitment, job satisfaction – with greater impact on female than on male teleworkers (Troup and Rose, 2012) – and with employee discretionary behaviour (Anderson and Kelliher, 2009). However, teleworkers may find themselves feeling that they lack organisational belonging, particularly when there is evidence of a lack of steadiness and credibility, or of conflict and exclusion from ownership (Belle et al., 2014). On the other hand, a survey which used a European sample of home-based teleworkers and their partners indicates that WFH increases employee's sense of overall belonging (social, physical and community belonging) where belonging is defined as the fit between employees and their various environments (Vittersø et al., 2003). From another perspective, evidence from US legal firms indicates that adoption of

flexibility among lawyers can be perceived as proof of a lack of loyalty towards the firm (Benko and Weisberg, 2007). This can be explained by the fact that flexible work arrangements can be more difficult to implement in male-dominated organisations (such as law firms) (Holt and Thaulow, 1996). Finally, commitment to flexibility and not to the organisation can be a significant side-effect of implementing WFH; employees learn to be dedicated to WFH and not to the organisation (Tietze and Nadin, 2011).

An increase in employees' motivation can be another key advantage in the adoption of homeworking. A very recent study suggests that employees who telecommute (work from home) actually feel more autonomous than those who do not, whilst as the intensity of telecommuting increases, this perceived autonomy becomes greater (Gajendran et al., 2015). When employees are given autonomy and control over their job, they are more motivated as these two factors are very often perceived as an indication that the employer trusts the employees (Duxbury and Higgins, 2002). It is important to remember that, according to the classic work of Hackman and Oldham (1975), characteristics of the job (such as the level of autonomy) are critical in motivating employees as they are linked to morale with the level of autonomy also being linked to intrinsic motivation. Overall, telework is not only positively associated with autonomy but also with reductions in work pressure and role conflicts (Sardeshmukh et al., 2012), whilst homeworking hours are associated with positive effects such as psychological empowerment (Redman et al., 2009). Long service in an organisation can be a significant reason why a worker might gain the right to telework (herein telework is defined by the authors of this specific research as WFH) and this can be perceived as a sign of the employer trusting the

employee (O'Neill et al., 2009). Particularly, autonomy and self-definition in regard to the manner that home and work life can be controlled and combined are two direct outcomes of the implementation of telework practices (Armstrong, 1999). In conclusion, workers' autonomy can be perceived as a critical factor in the successful implementation of telework practices (Clear and Dickson, 2005).

Another reason to adopt WFH is the supply-side argument for longer hours of work. A significant number of studies link WFH with the spread of working-time schedules (Alexander et al., 2010) – particularly for mothers who want to 'catch up' in case of earlier rearrangements of work schedules in an effort to accommodate children's needs (Hilbrecht et al., 2013) – or longer working hours (Golden, 2008; Peters and Van der Lippe, 2007; Nätti et al., 2011; O'Neill et al., 2009; Dimitrova, 2003; McNaughton et al., 2014). On the other hand, there is only a single study, focusing on female workers, which finds that:

'... women who work at home spend almost an hour less time in paid work than those [women] who do not work at home.' (Wight and Raley, 2009: 199).

Generally, expanding the hours of service is a significant help that telework can offer in cases of covering needs in different time zones or larger portions of the day (Olmsted and Smith, 1994), whilst in traditional-management-oriented companies, long hours are very often perceived as evidence of productivity and commitment (Lewis and Roper, 2008). Finally, over 60 per cent of 1566 teleworkers (herein definition includes home-based employees) who participated in a study declared that they felt that they worked longer hours, but the majority of them were happy with their work-life balance (Maruyama et al., 2009). Bianchi and Wight (2010) recognise that longer hours can make an employee's family life suffer but, taking the employer's point of view, they link

longer hours with many good outcomes such as good pay and benefits and the feeling that you participate in intellectual and challenging work. In particular, Green (2004) finds that working 46 or more hours per week can be linked with higher job satisfaction than working 30-45 hours, whilst Barnett (1998) claims that workers in jobs with longer working hours report higher motivation, commitment and job satisfaction and less depression or boredom. On the other hand, a meta-analysis of 25 studies researching 603,838 individuals from Europe, the USA and Australia suggests that there is an association between long working hours and stroke and coronary heart disease (with a weaker association for coronary heart disease) (Kivimäki et al., 2015). Duxbury and Halinski (2014), who studied a sample of 1806 Canadian professionals who teleworked for more than an hour per week³, suggest that employers who want to assist professional employees to cope with heavy work demands and work-role overloads (particularly those who work more than 45 hours per week) should encourage teleworking. At this point it is important to note that the long-hours culture needs to be perceived with caution as it may eliminate benefits gained by employees from alternative methods of working (Lewis and Dyer, 2002). Mustafa and Gold (2013) suggest that a good method of controlling time is to control the in-house space of work by creating routines (and by including in them children's everyday activities), 'mental fences' and physical boundaries of the space that is dedicated to work.

Another benefit of introducing WFH is that it can help the continuity of work during adverse weather conditions (Olmsted and Smith, 1994; Duxbury and

³ This study is another example of the aforementioned issue that there is no standard terminology or definition for telework; in this case, somebody who worked more than an hour per week from home, for example for two hours, was classified as a teleworker.

Higgins, 2002), transport strikes (Mello, 2007), pandemics or other human-origin disasters (Overmyer, 2011) and earthquakes (Donnelly and Proctor-Thomson, 2015) and can protect employees from terrorism as it keeps them away from high-rise office buildings and populated cities (Reed et al., 2006). During the big snowstorms of February 2010 in the USA, federal organisations such as the Defense Information Systems Agency (DISA), the National Institutes of Health (NIH) and the Federal Deposit Insurance Corporation (FDIC) continued their operations as a result of using home-based workers, whilst only 35 per cent of all federal workers continued to work in that particularly difficult period of time (Overmyer, 2011). In fact, 40 per cent of DISA employees continued to work from home during Hurricane Sandy in 2012 (Brewin, 2012). On the other side of Atlantic, one of the main reasons why the overall transport system worked well during the 2012 Olympic Games was that many firms had offered flexible work arrangements to their employees (Stevens, 2012).

Another reason for companies to introduce telework policies is cost reduction which is a significant field of interest in this research. As mentioned earlier, the oil crisis of the 1970s and the need to save energy promoted the idea of telework. Traditionally, WFH has been linked to a drop in employers' costs (Oettinger, 2011; Kurland and Bailey, 1999; Skyrme, 1994; Hilbrecht et al., 2013) and these can be overhead costs such as premises costs (Pyöriä, 2011), office and possession costs, or space and furnishing-requirement expenses (Duxbury and Higgins, 2002). Di Martino and Wirth (1990) give examples of companies in the USA and the UK from the early years of telework, which have used telework (herein the definition includes WFH) to reduce costs. Indeed, in the USA, Sun Microsystems Inc. announced that, in 2005, they saved \$69

million (about £44.16 million as converted on 23rd July 2015) of real-estate costs as a result of implementing telework, whilst AT&T announced in 2001 that the annual decrease in real-estate costs from the beginning of the implementation of telework practices in 1992 was \$25 million (about £16 million as converted on 23rd July 2015) (Arnold, 2006). NORTEL, a telecommunications company in Texas, implemented telecommuting plans and the result was reduced costs in recruitment, real estate and overhead at the same time that an improvement in retention rates and a decrease in absenteeism were recorded (Schmidt and Duenas, 2002). Meyer et al. (2001) found that remote working from home increased companies' profitability, something that other forms of flexibility, such as job sharing, did not achieve. Furthermore, research investigating 30 award-winning (best places to work) companies in the New York State Capital Region found that remote working was positively linked with returns on assets and equities (Sands and Harper, 2007).

Besides the aforementioned American firms, more than 16 years ago, in 1999, British Telecom (BT) claimed that the average annual cost of a 'desk space' was £10,000 in London, which was significantly cheaper city then, and the estimated cost outside London was £6,000 (Reilly, 2001). It was calculated that, if they had 10 per cent of their staff working from home, they would save £134 million in costs (ibid.). Very often, implementing telework (herein definition includes homeworking among other forms of flexible arrangements) is perceived more as a way to reduce operating costs than as a way to improve quality and productivity (Nunes, 2005) despite the fact that productivity and morale can be affected as a result of the overcrowding that lack of expensive-to-rent space can generate (Nilles, 1998). Additional costs that may be reduced

by allowing employees to work from various places are those of insurance, parking and security (Olmsted and Smith, 1994).

Stanworth (1996) suggests that, at times of low levels of economic growth, telework (herein definition includes homeworkers but emphasis is given to those working from a distance with the help of ICT, differentiating from manual jobs) was used by employers to reduce costs in contrast to the early years of telework in the UK, in the late 1980s and early 1990s, when it was perceived as a tool to face labour shortages by retaining working women with childcare responsibilities. In addition, the increased participation of mothers in paid work and the employees' will to have a better balance between work and other non-work aspects of their life created the need for them to seek greater control over the way they worked (Kelliher, 2013). Moreover, another reason to implement telework is its ability to reduce employment costs through the hiring employees from areas with lower pay rates (Reilly, 2001). Companies very often use home-based freelancers so as to obtain skills that do not exist in-house, but at the same time companies aim to reduce financial costs (tax and National Insurance payments) and contractual obligations (Clark, 2000). For this reason, telework can be a double-edged sword; it can be a method to weaken work contracts and can therefore be perceived as a negative by employees (Nunes, 2005). Despite the potential limitations of telework policies in aspects such as measurement of performance, impact on teamwork, safety and liability, sufficiency of technology, security of information, selection of eligible employees, provision of telecommunications hardware and supervisor discomfort (Mello, 2007), after establishing a virtual office, few organisations have returned to a non-virtual office (Davenport and Pearlson, 1998).

On the other hand, despite the overall acceptance and continuance of telework policies from the majority of companies which have introduced them (Davenport and Pearlson, 1998), there is recent evidence of a few organisations giving up remote working and asking employees to return to the office [for example Rocco (2014) and Raghuram and Fang (2014)]. One of the most famous cases of this is Yahoo!. Below is part of the email sent by the HR department to Yahoo!'s home-based employees in May 2013, explaining the reasons:

'To become the absolute best place to work, communication and collaboration will be important, so we need to be working side-by-side. That is why it is critical that we are all present in our offices. Some of the best decisions and insights come from hallway and cafeteria discussions, meeting new people, and impromptu team meetings. Speed and quality are often sacrificed when we work from home. We need to be one Yahoo!, and that starts with physically being together. Beginning in June, we are asking all employees with work-from-home arrangements to work in Yahoo! offices.' (Rocco, 2014: 50)

Despite the fact that Yahoo! is a global player among technology companies, there is evidence that the banning of WFH arrangements was not imitated by other companies. For example, in the aftermath of Yahoo!'s ban, Swisher (2013) recorded statements by companies' spokesmen which demonstrate that the majority of tech companies continue to support, or at least keep a rather positive position towards, WFH; Facebook, LinkedIn, Google, Hewlett-Packard, AOL, Netflix, Twitter, Cisco, Microsoft, IBM, Airbnb, Foursquare and Path were among those companies that declared that they would continue to use this flexibility of space. It is not clear if Yahoo! managed to improve '*decisions and insights*' by bringing people back to the office, but it is certain that this policy generated negative publicity for the company and particularly for Marris Mayer, CEO of Yahoo! and the key driver of this ban (Heatherman and O'Rourke, 2014).

This section has explored the labour-market supply side and looked at how employers benefit when using the WFH model, showing that it is the employers' decision whether to implement this policy. The following section will focus on the benefits of WFH from the employees' side

2.3.3.2 The Demand Perspective of Working from Home: What impact has Working from Home on individuals?

As seen above, reduced costs are a fundamental reason for organisations to implement telework plans. This is one of the main benefits for individual employees as well. These costs can be associated with commuting (Nilles, 1975; Duxbury and Higgins, 2002), parking, food and clothing (Duxbury and Higgins, 2002) or paid childcare (Felstead et al., 1996). In 1994, British Telecom (BT) estimated that employees saved £900 per year on clothes and commuting as a result of homeworking (Reilly, 2001). In order to understand the value of this amount of money (£900), we have to remember that, one year earlier, in 1993, a one-day travel card for use in London's underground for zones 1-4 had a cost of £3.10 (London Underground and Network Southeast, 1993), whilst in 2015 the cost was £12 (Transport for London, 2015). In order to deeper understand the impact that an increase in commuting expenses has on workers' budget, a comparison between London's seven-day travel card and the national minimum wage in two different years follows. In 2005, a seven-day travel card for commuting in London's Underground zones 1-4 had a cost of £30.40 (Holdsworth, 2011), whilst in the same year the national minimum wage was £5.05 per hour (UK Government, 2014b). Ten years later, in 2015, the same

travel card had a cost of £46.10 (Transport for London, 2015), whilst the national minimum wage (until the end of September 2015) was £6.50 per hour. By comparing the data from these two years, it seems that, in 2005, a worker in London needed about six hours of work (£30.40/£5.05) to pay for the weekly travel card, whilst in 2015 he/she needed about seven hours of work (£46.10/£6.50). In addition, reduced commuting is associated not only with cost saving but also with time saving. As McNaughton et al. (2014) point out, WFH can be extremely helpful and a time saver particularly for people who have special mobility needs as they do not need to commute and to waste time waiting for specialised transportation services when, at the same time, they could have already started working remotely.

On top of the aforementioned cost reduction in commuting and clothing, homeworkers can reduce residential costs by choosing to live in less expensive areas (Olmsted and Smith, 1994), or in rural areas, as part of their choice to adopt a different, more decentralised lifestyle (Clark, 2000). Another benefit that employees have when working from home (herein definition includes WFH), as Skyrme (1994) suggests, is the opportunity to change employer without having to pay the relocation cost of moving home. Although WFH has been linked to decentralisation, there is evidence that work flexibility is an option for urban workers to a greater degree than suburban or other residents (Yeraguntla and Bhat, 2005). In addition to cost saving, reduced commuting time is another advantage of adopting telework (herein WFH) (Vermaas and Bongers, 2007) even if there is evidence that is not considered the main reason for implementing it (Maruyama et al., 2009). On the other hand, Zhu (2013) finds that, as a result of telecommuting and the opportunity of living far from

work premises, telecommuters (herein definition includes employees who telecommute at least once per week), when needing to commute to their work premises, have to travel for a longer distance and duration than those who do not telecommute. In addition, Nakanishi (2015), who conducted a survey using a sample of 142 teleworkers in Japan, found that increase in energy consumption at home may be another negative factor of telework.

The author of the current thesis finds all the examples provided above regarding the benefits and drawbacks that WFH may offer to employees very interesting and strongly believes that, for a social scientist such as himself, it is important to investigate further the impact that WFH has on the budget of both employees and employers in a contemporary setting.

Although reducing costs will always be a priority for all people and organisations, it is the current unstable economic environment that makes the need to reduce costs more urgent. This research focuses on the cost reduction as it challenges Overmyer's (2011) findings that reducing costs is not one of the main reasons why employees want to work from home. At this point it is important to give a picture of the current economic situation before the benefits that WFH may offer to the WLB factor of an employee are presented.

Krugman et al. (2011) explain that the economy does not always operate smoothly, something that we are currently witnessing. In particular, they mention that:

'... troubled periods are a regular feature of modern economies' (Krugman et al., 2011:4)

Krugman, in a debate about taxation of rich people, gives an example of current ethical considerations in the USA (Krugman et al., 2013). He says that:

'... we are living in a time, certainly in the United States, but also here in Canada, in which we are constantly being told that there are good things, humane things, that we would surely like to do, but we can't afford because we are short of money.' (Krugman et al., 2013: 6)

He continues by giving an insight into present economic inequalities, stating:

'... the top one percent of taxpayers in the United States in 2011, they had a combined income of about \$1.4 trillion, not counting capital gains.' (Krugman et al., 2013: 6)

As Stiglitz (2015) states, this top one per cent lives a different life with different worries, aspirations and lifestyles, highlighting the '*great divide*' between rich and ordinary people, a divide promoted by the government's overall policies. However, it is important to mention not only the privileged wealthier part of society which has attracted criticism from these two Nobel Prize winners. On the other side of the fence, there is a well-established challenging situation for the financially weaker part of society. From Jones' (2011) examples of the current demonisation of the working class to Lucio and McBride's (2014) criticism of the common use of the word 'unskilled' to describe manual jobs (are there really people without skills?), there is evidence that a significantly large part of the working population lives in a financially difficult situation. Piketty (2014), another strong critical voice, explains that, from the three existing methods of reducing public debt (i.e. taxing capital, increasing inflation and imposing austerity), Europe has chosen the least just and least efficient method, that of austerity. Varoufakis et al. (2011) focus on the aftermaths of the '*Crash of 2008*' and the long-term effect on the European economy. They give a picture of the dangers of the current unstable situation:

'In Europe, the whole continent is reverberating with a crisis that refuses to go away and which threatens European illusions that have managed to remain unscathed during the past 60 years.' (Varoufakis et al., 2011: 6)

Indeed, Varoufakis (2013), from a very critical perspective, defines the new, predominant, post-2008 social system as 'bankruptocracy' (rule by bankrupted banks). In presenting the background to the general economic situation in which people and organisations operate, this review will now focus on the UK, the broad working framework of the current research. Jenkins (2012), in his book *A Short History of England*, divides the history of the English nation into 32 periods, starting from 410AD and the dawn of Saxons in Britain. The period that he names '*The Welfare State*' starts after the end of Second World War and ends in the year 1979 (more than 37 years ago) and this is something that should be considered in discussions about rewards and terms and conditions of employees in the UK. According to a government report (Shale et al., 2015), in the year 2013/14, 14 per cent of working-age adults in the UK were in relative low income before housing costs, 15 per cent were in absolute low income before housing costs and 23 per cent were in absolute low income after housing costs. Can this description, together with the above presentation of the current global financial situation, make us become optimistic about significant improvement in employees' annual income? It cannot and this economic environment is one of the main reasons that this research focuses on the importance of cost reduction.

A significantly large part of the WFH literature focuses on the improved WLB approach and presents it as one of the main reasons for employees to work in this mode (Vermaas and Bongers, 2007). Indeed, employees who spend more than 90 per cent of their working time at home report three times better WLB than those who work at home for less than 40 per cent of their total working time, whilst this strong correlation between WFH and WLB becomes even

stronger for 55+ age group as they may work for years under the same employer and have no more child responsibilities as a possible cause of conflict (Maruyama et al., 2009). Such conflict can result from the invasion of work into the home, the new uses and roles of objects and rooms and the problems of co-residents having to learn and adapt (Wapshott and Mallett, 2012). Research that studied 20 self-employed teleworkers in France, the UK and the USA found that they were interrupted by family and friends when working from home and they very often felt torn between work and home responsibilities (Mustafa and Gold, 2013). Generally, space can be a significant problem for WFH, particularly for female workers (Sullivan, 2000; Armstrong, 1999), whilst sometimes it is difficult to separate the home from the work environment (McNaughton et al., 2014). Felstead et al. (2005) mention that it is common nowadays for many office-furniture manufacturers and retailers to include, in their range of products desks, chairs or cabinets suitable for use at home. Having children (and other dependants) may boost employees' willingness to work from home (O'Neill et al., 2009). It has been observed that teleworkers usually have more children living at home than do office-based employees (ibid.). The majority of home-based workers believe that WFH helps with dependent care whilst improving their performance and their intention to remain with the organisation (Major et al., 2008).

Similar results from American governmental research indicate that telework (herein WFH) helps 91 per cent of employees who have a dependent, whilst 60 per cent of the sample declared that they perform better at their job (Joice and Verive, 2006). Indeed, teleworkers who have children are less likely to mix home and work roles (Fonner and Stache, 2012). More specifically, those with

increased parental obligations benefit more from flexible work arrangements than do others with fewer obligations (Allen et al., 2013), whilst childcare in particular is considered as a motivator for working from home but to a significantly larger degree for female than for male workers (Felstead et al., 1996; Mirchandani, 2000; Felstead et al., 2001; Wheatley, 2012).

The overall work-family conflict [although Barnett (1998) doubts whether there is really a universal definition of what constitutes this work-family complex and whether people can be perceived as having different and competing 'selves' and not co-existing responsibilities and needs] decreases as a result of WFH (Madsen, 2003) despite the role conflicts that may be created and presented in literature as negative consequences (Peters and Van der Lippe, 2007; Madsen, 2003; Youngah et al., 2011). This co-existence of home and work, which is very often perceived as problematic where adjustments are required between both the two worlds (Tietze and Musson, 2005; Tietze, 2002) – home and work are usually presented in literature as two different, incompatible worlds (Musson and Tietze, 2004) – can lead to a better outcome for both work and family (McNall, 2010). This work-family balance is an important challenge for all employees as it is positively associated with their marital happiness and family performance, functioning and satisfaction (Carlson et al., 2009) and negatively associated with emotional exhaustion (Nitzsche et al., 2013). It is important to remember that negative spillovers from work can create lower life satisfaction (Wolfram and Gratton, 2014). On the other hand, there is evidence that overall engagement at work can bring happiness to employees and can influence their partner's happiness (Rodríguez-Muñoz et al., 2013). However, there is also evidence demonstrating that there is often '*a negative path*' from the job-

holder's home-based telework to his/her partner's sense of quality of life, mainly caused by overworking and withdrawals, combined with unclear work-home boundaries and negative spillovers (Vittersø et al., 2003: 201). Nonetheless, very often it is the organisational structure that can work as a forerunner for spillover from work to home (Sok et al., 2014). Domestic jobs can be arranged easily, women feel that they are better mothers, whilst very often WFH is seen as an opportunity to escape from a '*problematic*' office environment (Tietze and Nadin, 2011).

In a significant survey, conducted on teleworkers who were asked to express their motivations, concerns and positive and negative outcomes of telework both prior to its implementation and after its implementation, Maruyama and Tietze (2012) found that employees who were introduced to telework were significantly more positive towards it after having worked remotely for a maximum period of 12 months. White-collar employees, as the chosen CRA sample in the current thesis, usually choose to work from home to decrease work-to-family conflict (Ammons and Markham, 2004). It is important to highlight that work-to-family conflict may lead employees to greater exhaustion (Golden, 2012).

The number of hours working from home is largely associated with the perception that the organisation is family-friendly (Redman et al., 2009), whilst telework (herein WFH) itself is considered as a family-friendly working mode (Hilbrecht et al., 2008) and family-friendly organisations are considered more attractive (Bourhis and Mekkaoui, 2010). Moreover, by improving the work-home interface, companies manage to attract and retain managers of high quality (Sok et al., 2014). WFH is considered as a mode of work that improves

WLB (Major et al., 2008) and quality of life, particularly for knowledge workers (Tietze et al., 2009), whilst a study of professionals and managers, who work in North American companies, demonstrated that those who have a rich external (outside their job) life and good WLB, as a result of their company support, are more committed, work harder and have an improved performance (Lee et al., 2002). A recent study, which researched a sample of 102 employees of a US government agency, found that they experienced more job-related positive affective well-being, where positive affect is linked to states such as enthusiasm, alertness and happiness, on the days that they teleworked compared with the days that they worked from the office (Anderson et al., 2015). On the other hand, from a critical perspective, Duxbury and Halinski (2014) doubt the ability of telework to meet demands at home; on the contrary, they find it very useful to cope with demands mainly from the place-of-work side. In a similar approach, Felstead et al. (2005: 133) claim that the world of WFH is not always perfect and that there is evidence of '*uncertainty, ambiguities and unpredictability*' in the relationships between the homeworkers and other residents of the home and between the homeworkers and their managers.

Another determinant of WLB can be the decrease in stress which, except for its link to the consequent decrease in absenteeism, can be linked to better health as psychological pressure in the workplace can create problems with heart rate, blood pressure, blood cholesterol, peptic ulcers etc. (O'Driscoll and Cooper, 2002). Evidence from a study of a small sample of teleworkers indicates that work at home is associated with lower blood pressure than is work at the office (Lundberg and Lindfors, 2002). It is important also to highlight that employees

with heavy home demands very often report stress symptoms, health complaints and lower levels of job motivation (Brummelhuis et al., 2013).

Overall, WFH improves general working conditions whilst offering better control and autonomy to employees (Duxbury and Higgins, 2002). When WFH is combined with freelancing, it can be perceived as a method of controlling life and gaining independence (becoming your own boss) or as a therapeutic antidote to uncertainty caused by the difficult climate of economic recession, high unemployment and increasing organisational outsourcing trends (Clark, 2000). In an area of high unemployment, WFH can provide people with the opportunity to work elsewhere whilst supporting safer communities by reducing issues related to home security, 'latch-key' children and elder care (Duxbury and Higgins, 2002). In addition, WFH, on a freelance basis, offers a greater level of autonomy and self-definition whilst it can also protect workers from the trauma of redundancies, sexual discrimination and the overall lack of control of working life (Armstrong, 1999).

Finally, another significant dimension of WFH is the help that it can offer to those who are disabled or ill. In particular, telework can offer accommodation to people who are disabled or who have to handle fatigue and/or pain (Moon et al., 2014). There are 11 million people with a limiting long-term illness, impairment or disability in the UK with a significant part of these having an impairment which affects mobility, carrying or lifting (UK Government, 2014a). In 2012, 16 per cent of the total population of working-age adults were classed as disabled whilst only 46.3 per cent of disabled people of working-age were in employment compared with 76.4 per cent of the non-disabled working population (UK Government, 2014a). The statistics of these examples of 'unprivileged' but very

common types of citizens presented above highlight another significant reason why WFH should be implemented. It is important to highlight that research conducted on 102 patients with medically diagnosed amyotrophic lateral sclerosis, who had a mean life expectancy of about three years, found that even people diagnosed with terminal illness had a willing to work but this willingness depended on, amongst other factors, the accessibility of travel (Westaby et al., 2005). Thus, statistics and medical records indicate that disability or serious disease are not very uncommon in the working population and that telework could offer important help for those ill/disabled people and their carers and/or partners who cannot afford to reduce their working hours.

In conclusion, the main emphasis of this section has been on presenting the benefits of WFH to employees. WFH offers a significant cost reduction to employees, which is an important aim in a stagnant economic environment, an improved WLB and a significant help when disability reduces the option of employment. Moreover, employers and employees are not the only winners in the implementation of WFH policies. The next section offers another insight into the phenomenon by emphasising the overall contribution of WFH to society.

2.3.3.3 The Societal Perspective of Working from Home

Taking an individualistic approach, WFH has been presented as a work mode that saves costs whilst improving quality of life and organisational performance. On the other hand, taking a more collective approach, it can also be very beneficial for the community and the environment, as will be discussed in the following paragraphs.

First, WFH can help to reduce traffic congestion (Duxbury and Higgins, 2002; Peters and Van der Lippe, 2007; Van Lier et al., 2012) and the taxes linked to this congestion (De Borger and Wuyts, 2011). WFH helps in reducing traffic congestion's consequences, such as the decrease in employees' productivity as a result of their wasting time in traffic, as well as the total environmental degradation (Vermaas and Bongers, 2007). Promoting WFH is a significantly cheaper and easier way to decrease traffic congestion than trying to create new road infrastructure (Kolman, 2008). More recent research in Belgium links teleworking with the increase in safety on roads, as telework decreases the total vehicle-kilometres travelled (Pirdavani et al., 2014).

All the above indicate that WFH can have a positive effect on the environment (Olmsted and Smith, 1994; Cascio, 2000; Pyöriä, 2011) as it improves the overall quality of air, decreases noise levels (Van Lier et al., 2012) and reduces carbon dioxide emissions (Lari, 2012). IBM (2015), a global pioneer in telecommuting, on its website, informs readers that, for the past two decades, it has used two programmes – 'work-at-home' and 'mobile employees' programmes – in which 100,000 out of the total 379,572 employees participate, to decrease employees' commuting needs and offer a better balance between their work and personal responsibilities; in 2014, the implementation of the work-at-home programme, in the USA alone, saved approximately 4.8 million of gallons of fuel and 38,000 metric tons of carbon dioxide emissions. Research involving American teleworkers (home-based) suggests that WFH can reduce carbon dioxide (CO₂), nitrogen oxides (NO_x), sulphur dioxide (SO₂), particulate matter (PM₁₀) and carbon monoxide (CO) emissions as a result of reducing transportation-related impacts. However, the benefits of this decrease can be

undermined because of the home-related impacts that will increase as a result of the additional time that employees will spend at home (Kitou and Horvath, 2003). The aforementioned research is conducted on a specific US way of living and working which does not apply to other places of different heating, cooling or commuting customs (Kitou and Horvath, 2003) and this means that there is a problem when measuring emissions since quantifiable results of emissions cannot be generalised in other countries.

To sum up, WFH is a model of work that offers significant benefits to employers, employees, the environment and society. Although a significant number of researchers have presented WFH as a positive way of working, it is important to understand that, very often, its successful implementation is linked with the organisation's good management. Therefore, the next section will emphasise the link between implementing WFH and managerial decisions.

2.3.4 Implementing Working from Home: The Managerialist Perspective and Guideline

Despite legal requirements, or societal desire for more flexibility in the workplace, the final decision always comes from the side of the employer. As a result, this section presents the factors linked to the management decisions when it comes to the introduction of WFH in the workplace. Telework policies have to be matched with organisational characteristics such as IT infrastructure (Garrett and Danziger, 2007), general internal workforce philosophy (Peters et

al., 2010), or national culture (Peters et al., 2009) in order to be successful and to produce positive outcomes. Despite the fact that, very often, such policies do not apply to all organisations, jobs and employees (Blanpain, 2007b) or all life situations (Pyöriä, 2011), very often it is only a matter of good preparation and implementation of policies. It is common, in cases of failures, for managers to blame homeworkers' psychological characteristics and not the social relations involved in employment (Felstead et al., 2003). On the other hand, Tietze and Musson (2010) characterise teleworkers' identity as critical for the good implementation of telework; they mention that people do not give a stable definition of what is the meaning of their work, home and 'selves' and create a framework of this remote mode of work based on the characteristics of their lives.

Before the introductory stage of the implementation of any telework programmes, decision-makers should ensure that job responsibilities can be performed off-site, that employees can work with minimal supervision and no direct contact, that institutional support exists, that supervisors understand and believe in its value, that off-site workplaces are safe and finally that employees are secure and free of distractions (Mello, 2007). Tietze (2005) claims that teleworkers can work from 'anywhere' and at 'anytime' and, as a result, Reilly (2001: 145) suggests:

'Organisations should concentrate remote working where activities are individually driven, require minimal supervision or instruction, do not need to be performed at set times and can produce measurable outputs.'

Successful implementation of WFH starts from the careful preparation of the IT infrastructure and training in health-and-safety aspects. It is important to

highlight that WFH brings IT changes which can create problems (Collins, 2005), whilst laptops are treated in a different way than are personal computers (PCs). From a security perspective, teleworkers (herein definition includes home-based employees) can increase the risks associated with technology or data protection (Peacey, 2006; Pyöriä, 2011). 'Locking down' (i.e. no new information can be added) laptops and use of docking stations and Virtual Private Network (VPN)-encrypted hard drives, to prevent the loss of data in case of a lost/stolen device, can reduce risks (Overmyer, 2011) but the most important measure is to train people in good practice and to make them realise that they are not simply users but part of the organisational system; their lack of security-consciousness can be a risk to business continuity (Furnell, 2006). Furthermore, another significant theme of the WFH training agenda, which is very often neglected, is that of ergonomics (Harrington and Walker, 2004). It is very common for home workers to work with a laptop on their lap, or on a bed or sofa, and such practices can lead to discomfort and neck or back pain (Harrington and Walker, 2004; Douglas, 2011). Ellison (2012) identifies some potential health threats resulting from the wrong use of equipment at home; in the case that an employee uses only a laptop, the keyboard's wrong placement may cause risk to the shoulders (when placed too high) or ulnar deviation (a side-to-side movement of the hand to the wrist away from the thumb), whilst when the monitor is too low, it may cause risk to the neck and shoulders. Ellison (2012) suggests that the use of a mouse, an external keyboard and an external screen, in addition to the laptop, can minimise the aforementioned risks. Robertson et al. (2012) indicate the need for organisations to design, implement

and evaluate a macro-ergonomic approach to safeguard the health and safety of the teleworker.

In addition to any technical difficulties that mobile working may bring (Brodt and Verburg, 2007), traditional management culture is very often an important reason for the slow diffusion or failure of a telework project (Pyöriä, 2011). It is important to remember that working at home abolishes workers' traditional visibility and presence at a workplace, challenging the well-established mainstream methods of supervision dominant at workplaces since the beginning of capitalist organisations (Felstead et al., 2005). For example, many Western multinational companies which, following the successful implementation of remote work in other places, introduced telework policies in China, found significant difficulties and sometimes had to give up their usage as a result of the existence of a different managerial culture based on high-power distance, paternalism and high-context communication (Raghuram and Fang, 2014).

To give another example, Dahlstrom (2013) highlights the importance of choosing the appropriate leadership framework for managing telecommuters. In particular, Dahlstrom (2013) divides leadership behaviour into two different styles; one style emphasises those tasks where deadlines and maintenance of standards are important, whilst the second emphasises the relationships where job satisfaction and putting employees at ease are important managerial priorities. Although there must be a balance between the two styles and the importance of both job structure and organisational processes must be recognised, in the case of telecommuting the weight of the two leadership styles should be on the relationship-oriented model (ibid).

From another angle, Peters et al. (2010) classify management styles in three categories: the traditional *Taylorist* approach that focuses on line managers' control and coordination of their subordinates' jobs; the *market* approach where mainly knowledge workers exchange their time for pay; and finally the *cooperation* model where employees are viewed as partners. As line managers are an important factor of the telework success, the management style based on the principles of Taylorism is inappropriate for WFH (Peters et al., 2010). Very often, it is the line manager who is going to decide if the subordinate should telework. For example, evidence from an online survey among German managers in which managers, in a hypothetical scenario, had to decide if they would allow one of their subordinates (working in administration or sales) to work from home for two days per week, suggests that the decision whether or not to approve a request depends on the quality of relationship between manager and employee with management more likely to approve a request from a female rather than a male employee (Beham et al., 2014). Another significant piece of evidence of the importance of line management comes from Donnelly and Proctor-Thomson (2015) in their case study of a public agency in Christchurch, New Zealand, in which the only organisational site had to close suddenly and all 824 members of staff who work there had to be immediately moved outside the premises (mainly to work from home) as the result of the aftermath of the disastrous 2011 earthquake. Line managers were proved to have a critical role in shaping the organisational and individual employee outcome (ibid.). Lautsch et al. (2009) find that supervisors should have a close relationship with telecommuters (herein definition includes homeworkers), but that the focus should be on sharing information and not on surveillance of the

work schedule. They suggest that this approach leads to better performance, less work-family conflict and better co-operation with co-workers. On the other hand, there is evidence that the prevalence of telework may be negatively associated with non-teleworkers satisfaction (Golden, 2007).

Management style needs to focus on 'high-trust' (Offstein et al., 2010) and commitment (Brodt and Verburg, 2007) and not on control and coordination, since these factors improve performance (Peters et al., 2010). Evidence from research that studied 177 telecommuters from various organisations in the USA suggests that supervisors who use motivating language – a language which comprising the three types of oral communication, direction-giving, empathetic language and meaning-making and their combination – can offer a positive influence in significant organisational outcomes (Sullivan, 1988). In their contact with telecommuters they achieve better competence in their communication skills as well as those of telecommuters' and also job satisfaction and organisational commitment (Madlock, 2013). The existence of performance management is essential in all cases of virtual workplace management (Mahler, 2012), whilst a study that researched 157 telecommuters in seven US companies suggests that the majority of supervisors prefer to use a task-orientation style of leadership (Madlock, 2012). On the other hand, despite the fact that there is evidence from 'old-fashioned' public bureaucratic organisations that they can implement telework (herein teleworkers can be home-based) successfully (Taskin and Edwards, 2007; Taskin, 2010), traditional management stereotypes are still present and form a significant barrier to the diffusion of telework according to Dimitrova (2003) (herein Dimitrova uses '*telework*' as a term but in definitive terms is actually describing WFH). There is

evidence that a significant barrier to the successful implementation and management of alternative work arrangements is the fact that many managers and clients still perceive '*face time*' as an important measure of productivity (Kossek, 2005).

A significant study conducted in China, a country with a more traditional managerial style and, as a result, a history of many failed implementations of telework policies, suggests that telecommuters are more willing to accept telework policies when they perceive that some traditional and cultural managerial rules still exist. Remote employees should perceive that their supervisors are also telecommuters, whilst they should recognise that supervisors have high legitimate and reward power (Raghuram and Fang, 2014). Overall, middle managers perceive the lack of employees' visibility as a problem (Davenport and Pearlson, 1998), whilst very often employees also regard tele-managers' absence from office as problematic, particularly in aspects such as feedback, empowerment, professional development, workload, job satisfaction and turnover intentions (Golden and Fromen, 2011).

Indeed, WFH cannot change pre-existing social relations and inequalities or lead to more democratic approaches based on abrogation of hierarchical structures and trust (Dimitrova, 2003). In addition, trust, which may lead to high organisational performance (Peters et al., 2010) can be a solution to the absence of managerial interventions and worker's lack of visibility, whilst it needs to emphasise self-management skills (Felstead et al., 2003). Very often, telework failures can be linked to the absence of performance-appraisal systems as the early assessment of performance can help leaders to recognise problems and to intervene early (Cascio, 2000). Results-oriented leaders, as

opposed to time-, process- or location-oriented leaders, are usually a key factor for successful telework across all industries and sectors (Offstein et al., 2010). Furthermore, the organisation needs to question the suitability of the remote worker by examining if the employee has self-discipline, can motivate himself/herself, can cope with isolation, can separate home from work and has good time, work and communication skills, whilst managers should understand that every employee has different needs and should always be included in any training and development programmes (Reilly, 2001). On the other hand, according to Ammons and Markham (2004), problems such as isolation, difficulty in creating boundaries between home and work, distractions, temptations and workaholism (long hours) have been exaggerated in the literature of WFH.

Communication is another determinant of good management as the usage of different approaches, such as physical interaction, emails, phone calls, texts and web conferencing, can be critical to the implementation of effective telework (Offstein et al., 2010). IBM Canada uses instant messaging and collaboration software for monitoring home-based workers and keeping them in touch with other colleagues, as very often poor performance is a consequence of the lack of communication through technology (Leung, 2008). On the other hand, an overuse of emails can be a tactic which teleworkers adopt to demonstrate presence and availability to supervisors and colleagues (Taskin and Edwards, 2007). Overall internal communication is important as weak transfer of knowledge among employees can be harmful to organisational competitiveness (Taskin and Bridoux, 2010). Besides organisational communication, which WFH may influence, a lack of face-to-face contact can create feelings of social

isolation (Duxbury and Higgins, 2002; Wilks and Billsberry, 2007; Valsecchi, 2006; Whittle and Mueller, 2009; Lai and Burchell, 2008; McNaughton et al., 2014; Vermaas and Bongers, 2007). Social support and development of team spirit are necessary from the management point of view (Offstein et al., 2010) as very often teamwork is at variance with telework plans (Pyöriä, 2011). On the other hand, a study of two big communication firms offers evidence that telework can support teamwork by offering a positive effect on new product-development projects; it improves the quality of the product which is under development because it allows knowledge to enter from both internal and external parties – something that a focus group cannot obtain (Coenen and Kok, 2014). Telework improves the speed and quality of the whole developmental process, particularly through the usage of virtual tools, but this approach does not eliminate the need to use physical face-to-face contact as well (ibid). Vayre and Pignault (2014) conducted a study on French teleworkers (herein definition includes employees who work from home) and suggest that the isolation and lack of informal relationships that employees report should be countered by the planning of training programmes and regular face-to-face meetings to safeguard the management of activities and the spread of information among all stakeholders. In addition, home-based workers who used to tie their lives to the office should search for alternative ways of socialisation, such as charities, school boards, churches, neighbourhood associations or clubs (Davenport and Pearlson, 1998) and other interests and friends who can offer help or company (Lai and Burchell, 2008).

In a recent study about telework and the hesitancy to seek help that employees often feel, Golden and Schoenleber (2014) suggest that, in the case of telework,

the already existing hesitance in traditional working arrangement to ask help from managers and co-workers may be significantly higher because of the fact that asking for help may be perceived as a lack of knowledge and thus lead to a reduction of self-esteem. Golden and Schoenleber (2014) recommend employers to keep teleworkers always informed, provide them with better equipment, guidelines about what hours should be available to their colleagues in the office and finally to create an organisational climate that encourages teleworkers to seek help.

Finally, an additional important factor of organisational communication and training is the handling of colleagues who continue to work in the office. As telework (herein definition includes WFH) is perceived as an employment benefit, office-based employees can consider the lack of participating in such a programme as inequitable treatment (Mahler, 2012) and, according to equity theory, may become demotivated and contribute less because they feel they are treated inequitably (Adams, 1965).

This section has explored topics relating to the management agenda and has argued that it is important to highlight aspects which need to be taken into consideration before implementing WFH policies. It would appear that there are many issues which need to be examined before introducing flexibility in the workplace. Goodwill, from both the demand and supply sides of the labour market, is not enough to guarantee the successful operation of WFH; on the contrary, there is a need to focus on every aspect of HR management before changing the customs and norms of an organisation. The next section investigates another critical factor for the successful implementation of the WFH model of work, the IT factor. It focuses on presenting some significant

milestones of the technological change which has happened since the time that telework (telecommuting) literature was introduced in the mid-1970s.

2.3.5 The technological factor: A 21st-century insight

'Over the past decade, computer technology has become very sophisticated, permitting expanded applications and lower costs'

Nilles (1975: 1143)

If Nilles (1975), more than 41 years ago, found technology of that time capable and cost effective for achieving a decentralisation of companies, today's technological advancements would have the potential to create a virtual working reality in a significantly easier way. Indeed, an important part of the current study focuses on the technological factor and the influence it may have on the correct implementation of WFH. The rationale behind this section is to demonstrate some historical data of the technological change to give some indication of how the ICT factor has changed the agenda of WFH through the years.

An important aspect of technological change is the reduced cost of the necessary technological equipment that an employee uses in the office. For example, 15 years ago, Belanger et al. (2001) recorded the necessary equipment that American telecommuters needed and its costs. Table 3 includes all the suggested materials and their cost.

Table 3: Costs of Technology Resources Available for Telecommuters
(Prices are in US dollars as of October 1999)

Technology	Level 1 (low technology)	Cost	Level 2 (high technology)	Cost
PC (desktop)	Remanufactured 32Mb, 686, 12xCD etc.	550	Pentium II, 600 Mhz, 128Mb, 20Gb, 32xCD	2528
Printer	None or personal dot matrix	45	Fast Laser Printer (12ppm)	575
Modem (external)	14.4 kbps	49.95	ISDN terminal adapter	169
Communication Line	Regular phone line (1 year)	180	ISDN (for one year), including OTC	522.44
Fax Machine	None	0	Separate plain paper	150
Groupware application	None	0	Notes R5 client (collaboration)	69
Equipment and software for teleconferencing	None	0	Desktop (camera, phone, application)	384
Totals		\$824.95 (£536.22 as at 29 th August 2015)		\$4397.44 (£2858.34 as at 29 th August 2015)

Source: Balanger et al., 2001: 158

The first impression that the table creates, in line with today's technological standards, is that WFH needs a relatively expensive infrastructure, which may not be the case today. In 2016, 17 years after 1999, the technology resources available to telecommuters are significantly cheaper and of higher quality. For example, today (as at 29th August 2015), a laptop with a camera which has significantly better performance than the old Pentium II, at the John Lewis multistore, starts from £159.95 (\$246.32) (John Lewis, 2015). The internal web camera and microphone, together with the free download from Skype's website,

relinquish the need to buy the expensive hardware and software necessary to run a tele-conference in 1999.

Emails are replacing faxes, whilst emails interplay with face-to-face communication to create a complex style of communication (O’Kane and Hargie, 2007). External modems and ISDN lines are out of fashion, whilst today (29th Aug 2015) the broadband [according to Calzada and Martínez-Santos (2014), broadband internet access is defined by the European Commission as an access which is always on-service with speeds no lower of 144kbps] connection (16-50Mb per second) monthly cost varies from £0 to £4.50 (plus £13.50-16.99 for line rental) (Money Supermarket, 2015).

However, the advantage of using emails is not only the cost, but also the efficiency. Tietze et al. (2003) describe emails as short messages which get to the point promptly, whilst they perceive emails’ informality as a signal of the overall relaxation of the formal rules in Western society. O’Kane and Hargie (2007) claim that emails, unlike face-to-face communication, help employees to write and rephrase their communication without interruptions or pressure to give a prompt reply and to receive a type of information that, without emails would never have been received; receiving or sending a message increases awareness of the whole picture of the department and the organisation. Indeed, Markus (1994: 512) finds that managers prefer to use emails ‘*to communicate the same things to many people*’ whilst they prefer to use face-to-face communication, rather than emails, when they want to express emotions. On the other hand, emails may lead to receiving excessive and time-consuming irrelevant information, may allow employees to try to avoid face-to-face communication, or make it easier for employees to cover themselves and/or

blame others as receivers do not deal with their response immediately (O’Kane and Hargie, 2007). All these can lead to increased conflict, work overload and the consumption of time; careful header (an email’s title) and rereading the email before sending it can be two significant ways to reduce information overload and misunderstandings (O’Kane and Hargie, 2007).

Another significant reason that makes the implementation of WFH an option for many organisations is the quality and expansion of broadband connections which have been improved through the years. Gruber et al. (2014) suggest that quality of broadband and its expansion create economic benefits for an economy and, in particular, increase the national GDP per capita. Calzada and Martínez-Santos (2014) suggest that households without broadband access are in danger of becoming marginalised from a societal and economic point of view. According to data from the OECD, the fixed (wired) broadband-market penetration (subscribers per 100 inhabitants) in the UK was 30.5 per cent in June 2010 (OECD, 2015b) and 36.78 per cent later, in the last quarter of 2014 (OECD, 2015a), whilst earlier, in the period 1980-2002 (a significant period in the history of WFH literature), broadband penetration was less than 10 per cent in the 66 most advanced economies in the world with the exception of Canada, Hong Kong and South Korea (Gruber et al., 2014). At this point, it is important to highlight that during most periods in the recorded history of the WFH phenomenon, there was globally limited infrastructure which could support a fast internet access. It was not only the household penetration of broadband that was low several years ago but also the percentage of businesses which used broadband; in 2003 only 26.7 per cent of UK companies (of those with 10 or more employees) used broadband services, whilst eight years later, in 2011,

this percentage reached 93.5 per cent (OECD, 2012). Table 4, which uses as its basis the timeline of Zakon (2015), helps in understanding the existing technology that was in place during a significant part of the history of the WFH phenomenon.

Table 4: Important Milestones of ICT history

Date	Milestone
1971	The first email is sent.
1985	The first mobile phone call in the UK takes place just after midnight on 1 st January (Vodafone, 2013).
1990	The world comes on-line (world.std.com), becoming the first commercial provider of internet dial-up access.
1990	The first version of Microsoft Office for Windows (including Word, Excel and PowerPoint) is released (The Windows Club, 2016).
1991	World Wide Web (WWW) released by CERN.
1992	Number of hosts over 1,000,000.
1994	Shopping malls go online.
1994	In August, IBM's Simon is launched, the first smartphone ever (Prokaza, 2015).
1995	Traditional dial-up systems provide internet access.
1997	MS Office includes Outlook for first time (Mojave Media Group, 2008).
1998	Google was founded (Google, 2016).
2003	LinkedIn was launched (Linkedin, 2016).
2003	5.38 per cent is the UK penetration rate of fixed (wired) broadband (OECD, 2015a).
2003	Skype was founded (Skype, 2016).
2004	Facebook was launched.
2005	The German-based TeamViewer GmbH was founded (TeamViewer, 2016).
2006	57 per cent of households in Britain have internet access (Office for National Statistics, 2015b).
2015	86 per cent of households in Britain have internet access (Office for National Statistics, 2015b).
2015 (Q1)	93 per cent of adults own/use a mobile phone in the UK (Ofcom, 2015).
2015 (Q1)	66 per cent of adults have a smartphone in the UK (Ofcom, 2015).

As the next section investigates the literature critical of WFH, it is useful to bear in mind the technology available during the date of every published work which criticises the efficiency of WFH. An example of how technological innovations have changed the workplace originates from an analysis by Labour Force

Survey; according to this research, there were 2.1 million people who work from home in the UK who could not perform their job without the use of both a mobile and a computer (Ruiz and Walling, 2005). This population was about 68 per cent of the total workforce (3.1 million) who declared that home was the main place of work in 2005 (ibid). It is obvious that the WFH phenomenon has a definitely different presence today than when it was first developed in the 1970s and 1980s. It seems that today's technological improvements can create a supportive and creative working environment, abolishing the need to have employees work from a traditional office. Appendix 1 presents a table with the 40 most influential articles used and included in the Literature Review presented above. The reason for creating this table is to present the wide range of topics and sectors that are included in the WFH literature. The next section begins with a brief description of the history of two traditional forms of criticism of WFH.

2.3.6 Working from Home: A critical perspective

‘All great truths begin as blasphemies’
George Bernard Shaw (1919)

Despite the fact that many perspectives of the critical literature were presented in the earlier sections of the Literature Review chapter, this section appraises the critical point of view regarding two specific sources of critical approach: trade unions and feminists. A significantly large body of literature has been critical towards WFH and historically there are two main reasons: its neighbourhood and its humble ancestry. To be more specific, WFH is one type

of flexible work arrangement which very often blamed for creating a decrease in income and job security (Strachan and Burgess, 1998). In addition, it is often introduced by organisations at the same time as job cuts (Reilly, 2001). WFH very often lives in the semi-detached house wall-to-wall with the 'part-time' or the 'zero-hours contract' and opposite the 'temporary' work, whilst its origin can be traced back in the homeworking manual jobs and the piece-wage rates perceived by Karl Marx in his magnum opus, *Das Kapital*, as a hierarchical method of exploitation and oppression (Marx, 2008) (originally published in 1865). Allen and Wolkowitz (1987) describe historical route of homeworking and give a picture, enriched with traditional Marxist concerns, of an overall problematic mode. In particular, from a Marxist perspective, WFH is considered as a mode of work that isolates labour from the on-site workplace, an employee's natural place for industrial action (Greenhill and Wilson, 2006). On the other hand, according to a recent study, use of the internet and social media can play an important role in the advancement of the labour movement, whilst there is evidence that the internet can promote the role of the shop steward as union representative in the market (McBride and Stirling, 2014). In addition, Marx's overall approach has never been accepted by an important number of economists as, in his analysis, he seems to ignore the marketplace's demand-and-supply factors that influence employee-reward decisions (Armstrong, 2010), whilst his WFH approach ignores the sexual division of the workforce and the fact that, traditionally, women have been involved in domestic work more than men (Rani and Unni, 2009). On the other hand, to support the Marxist perspective, it has to be underlined that in Marxist theory, unlike neoclassical economics in which labour has the status of a commodity which

can be used, sold, dispensed etc., the social relations of capitalism (the author of the current research includes here the family and/or personal relations as a type of social relation) are not devalued at the humble level of exchange (Littler, 1982). However, *Das Kapital*, more than 150 years ago, in 1865, describes a working environment significantly different from today's where professionals work on a laptop monitoring clinical trials; it is important to highlight the significant dimension of the contemporary professional nature of the job, which is that workers manage their conduct and tasks autonomously (Tietze and Musson, 2003). Despite the fact that there are still concerns about WFH as a mode of work and whether flexibility is on the side of the employee or the employer (Zeytinoglu et al., 2009) – for example, Truss et al. (2012), based on the work of Alis et al. (2006), divide flexibility to flexibility *for* employees, where employees have a choice over when, where and how much they work, and flexibility *of* employees, in which employers use employees in a way to match their need for labour – there is evidence that, through the years, there has been a move towards greater acceptance of flexible work arrangements and away from the traditional sources of scepticism. For example, Reilly (2001) describes John Edmonds, at the 1997 conference of the UK's Trades Union Congress, criticising the Labour government and politicians of all parties who suggest to employees that security be replaced with employability, whilst then prime minister Tony Blair, at the same conference, answers that actual flexibility is much better in the real world. However, today, the Trades Union Congress (2015a) recognises the expansion of the WFH phenomenon and the fact that more than 1.8 million employees would like to work from home.

There is evidence that the first reaction (in the 1980s) from trade unions towards telework in Britain was a mixed one, with the Trades Union Congress being enthusiastic about the well-qualified professional teleworker (the target sample of this research) and at the same time sceptic about the *'back office'* teleworker, mainly women, who work as clerks under a weaker bargaining position (Stanworth, 1996: 12). The Banking, Insurance and Finance Union (BIFU) (members of BIFU now belong to Unite) reported that employers treat teleworkers less favourably than they treated office-based employees and that telework undermined the ability of unions to recruit new members. The Manufacturing, Science and Finance union (MSF) (members of MSF now belong to Unite) expressed concerns regarding the role of technology and the danger of downgrading rather than enhancing jobs (Stanworth, 1996). Generally, a critical perspective towards telework was developed from researchers who were working for trade unions and organisations such as the UK's Low Pay Unit and perceived telework as a model of work which *'could entail exploitative conditions of service'* (Haddon and Brynin, 2005:35). Strachan and Burgess (1998), who studied Australian workplaces, blamed the introduction of the so called family-friendly policies for decentralisation of industrial relations, but admitted that WFH (plus job-sharing as part of the so-called innovative work arrangements) had a minimum presence in their analysis.

In a more recent critical view, Williams (2014) characterises overall flexible work arrangements, in particular during the difficult time of the post-2008 economic crisis, as a way of strengthening managerial status, weakening trade unions and creating a cheaper workforce which works more intensively. However,

Kamerade et al. (2013) suggest that WFH and the current trend of 'backshoring' (bringing back home) of large organisations, such as large European, mainly German, manufacturing companies (Kinkel, 2012), can be combined to promote flexibility and cost reduction. Kamerade et al. (2013) explain the reasons behind the trend of backshoring:

'Backshoring happens largely due to the hidden costs of outsourcing and off shoring including wastage in partial outsourcing, problems with responsiveness as a result of time zone issues, managing change in multiple organisations and across borders, lack of tight controls on Service Level Agreements, fuzziness about responsibility for training and development, risks of losing unique company information to competitors and risks in reputation following suicides or poor customer services.'
Kamerade et al. (2013: 262)

Ironically, a type of flexibility (in this case, that of space) seems to create jobs and help to bring back those which were lost overseas, diminishing the initial aforementioned fears of using flexibility to create cheaper workforce (Williams, 2014) and technology to downgrade jobs (Stanworth, 1996). From another point of view, Alis et al. (2006), in their analysis concerning flexibility of time and its route through the last two centuries, consider that this struggle between the competitive powers of Fordism, Taylorism and Toyotism, which presses organisations and employees for efficiency from one side, and the collective agreements and legislation, which press for less working time from the other side, have boosted the need for flexibility and destandardisation of the industrialised world. A need has been identified to pass from the emphasis on standardisation of time schedules to the emphasis on various temporalities and on time flexibility (ibid). Therefore, the current research uncovered a significant part of these modern societal changes which require an overall flexibility in what is perceived as work and, in particular, as the workplace.

On the other hand, there is now a legal framework which allows, and sometimes demands, flexibility from the employer, which was not the case during the early years of the history of WFH and the criticism that followed. For example, on 16th July 2002, the European Trade Unions Confederation, together with the other social partners (Business Europe, UEAPME and CEEP) signed the non-legally binding European Telework Agreement which – despite the fact that, since then, it has been transferred to national legal framework in all member countries, with each member taking a totally different approach (Prosser, 2015) – can be perceived as an act of approval from the trade union side. Although the UK has implemented the aforementioned agreement in a poor way, as a result of lack of pressure from the side of the public authorities (Prosser, 2015), this agreement can be perceived as a significant milestone from an approval point of view and a guideline for future direction. After that date, in the UK, the legal framework changed to cover the need for flexibility; in 2003, parents of disabled children obtained the legal right to work in a flexible mode and this right was extended to all carers in 2007 and to all parents who have children under 16 years old in 2009 (de Menezes and Kelliher, 2011). On the other hand, in the USA, Rocco (2014) says that employers have the right to deny requests from employees wishing to telecommute, but they have to support this refusal, in case of a court dispute, in a legitimate way by showing that past policies and practices are consistent with their decision. It seems that the legal framework in all EU countries, including the UK, and also in the USA is supportive of WFH but does not oblige employers to offer such policies. Despite the fact that, historically, trade unions have expressed concerns, it seems that they now perceive WFH as an employee-friendly work arrangement. The following text, found on the

Trades Union Congress website, highlights the modern approach towards WFH whereby this work arrangement is perceived as beneficial to the employee:

'The TUC estimates that there could be as many as another 1.8 million people who would enjoy the BENEFITS [author's emphasis on "BENEFITS"] of working from home.' (Trades Union Congress, 2015a)

However it is not only trade unionists who traditionally have objections towards flexibility in general and WFH in particular; a significant part of critical literature originates from feminist authors who challenge that WFH, as a mode of work, can promote women's position in society and in the workplace.

Literature suggests that WFH has not contributed towards changing the existing structural and gendered division of labour (Tietze et al., 2009). WFH has not managed to change roles inside the family (Hilbrecht et al., 2008; Hilbrecht et al., 2013). Flexible working arrangements can be a valuable option for families that live inside an already 'egalitarian gender contract', but cannot introduce equity to those who live in a traditional patriarchal family environment (Sullivan and Smithson, 2007; Sullivan and Lewis, 2001; Hilbrecht et al., 2008). Sometimes, the failure to keep separating work from home can create tensions between couples, whilst there are cases of partners who complain about home-located worker's workaholism or about increased work-related volume of noise inside the house (Felstead et al., 2005). It is very common for men and women to perceive 'work' and 'home' differently; a study conducted in 10 European countries suggests that men are more likely to face work-to-home conflict, whilst the opposite (home-to-work conflict) is the case for women (Fahlén, 2014).

Despite the fact that WFH is very often linked to female domestic obligations – Mirchandani (2000) suggests that it is usually women who, in general, are spatially entrapped in domestic work, who choose to work near their place of

residence (Wheatley, 2013) – studies indicate that those who have the opportunity to choose their location of work are usually male, highly educated, better paid and senior professionals (Felstead et al., 2002). On the other hand, professionals, as well as managers, are a significant part of the total employment in the UK; two years after the aforementioned critique of Felstead et al. (2002), White et al. (2004) estimate that both types of jobs covered about 40 per cent of all employees. A large body of telework literature has focused on information technology and entrepreneurial aspects, which can be both characterised as components of a ‘masculine world’, whilst ignoring the fact that the majority of teleworkers were female (Armstrong, 1999). However, more recent data indicate that, nowadays, it is men who form the majority of homeworkers in the UK (62.9 per cent of total homeworkers) as a result of significantly outnumbering the women in self-employment (Trades Union Congress, 2015a). On the other hand, based on research from five countries (Britain, Germany, Israel, Italy and Norway), Haddon and Brynin (2005) suggest that female homeworking is associated with high status and not with routine or low-paid work.

Another important issue to examine is the time factor, which is differentiated between men and women. Indeed, evidence from six countries (Australia, Finland, France, Germany, Sweden and USA) suggests that women still have less discretionary time than men where discretionary time is defined as the disposable or free time that a person has after spending time on personal and household needs and on paid work (Goodin et al., 2008). On the other hand, men’s working hours do not vary according to the number or age of children (Bianchi and Raley, 2005) as usually they work more paid hours when they

become fathers (Lundberg and Rose, 2002). Alternatively, WFH can create space for those men who want to be involved in domestic jobs and to increase their emotional engagement as fathers (Marsh and Musson, 2008). In particular, Hilbrecht et al. (2013) find that fathers who are managers, and who spend a significant part of their working week at home, feel happy that they have more time to spend with their children, particularly during morning and evening. Being at home gives the fathers the opportunity to be involved in childcare and children's leisure activities, but on the other hand, it reduces the time they can spend on social contact with co-workers (ibid).

This section emphasised the critical literature that exists around WFH. Appendix 2 summarises the key articles which contain the critical literature as examined through the whole presentation of the literature Review Chapter. It includes 30 recent critical articles from 2000 and onwards in chronological order, which focus on drawbacks of WFH (mainly from the employee's side). Authors, year of publication, type of flexible working (usually WFH) as mentioned by authors in source, the critical output of the research, the size of the sample and the research methodology form the main columns of Appendix 2. The focus is on identifying the critical research on the negative effect of telework/WFH mainly on the WLB of the employee. The first impression that Appendix 2 leaves is the heterogeneity of topics, samples, countries and sectors which are mentioned. In a similar way to a table with 29 key articles reviewed by Tietze et al. (2009) – conducted to map the important topics of the recent (2000 to 2009) literature of homebased work – the researcher tried to map the most important critical literature of the WFH phenomenon which focuses on the employee. One of the main reasons for creating this Appendix is to highlight the lack of homogeneity

of teleworkers, which is also mentioned by other researchers (Wilks and Billsberry, 2007; Vayre and Pignault, 2014; Tietze, 2002). The researcher's perception is that, for the next 20 years or more, future researchers can easily claim in their work that they conduct exploratory research in an effort to map an unknown world/country/sector/field/occupation. This thesis is in line with Fonner and Stache (2012) who claim that teleworkers is an understudied population for social science. At this point, there is a need to reflect on this critical literature in an effort to evaluate the critical appraisal towards flexibility of space in the workplace. To be more precise, Appendix 2 summarises the most important critical articles of the WFH phenomenon (mainly around home-based employees' WLB). This Appendix includes research from a large range of sectors, countries and methodological approaches; for example, small case studies or large volumes of secondary data, small teams or households from large geographical areas, qualitative interviews and observations and focus groups or quantitative surveys were presented. The reason that this Appendix is analysed here is to highlight the fact that a significant part of the existing critical literature may not apply to the professionals in clinical trials, who are investigated in this research. For example, many of the critical findings presented in Appendix 2 originate not only from the UK but from a diverse global environment. To give some examples, evidence of the negative side of WFH may originate from the USA, Canada, Portugal, Poland, Iceland, Norway, Germany, Italy, Netherlands, Israel etc. Taking into consideration the various working and cultural environments, there are many differences between these countries, which may influence what is perceived as a problematic situation for various types of people. For example, Nunes (2005) suggests that one of the

purposes of telework is to weaken employees' contracts, but this is based on Portuguese organisations which operate in a totally different market than the clinical-trials sector in London. In another example from Appendix 2, Valsecchi (2006) finds that home-located employees feel isolated and that electronic monitoring of employees has some limits concerning its effectiveness, but again the findings originate from Italy and from call centres where both country and sector are different to the UK and the clinical-trials sector examined here. To make it clearer, in both examples taken from critical literature, Italy and particularly Portugal are two countries which score lower in individualism ranks (but higher in collectivism) compared with the UK (Hofstede et al., 2010), which may be an indicator of the different perception of weak contracts or isolation that people have in different cultures and nations where family and collectivism have different significance and definition. However, even though the examples from critical literature which mentioned in Appendix 2 make clear that a general universal theory to support the existence of a challenging home-based workplace cannot be constructed (just as the advocate literature can do the opposite and support the everything-is-perfect reality of remote employees' work-life balance), they provide valid starting points for the exploration and overall mapping of the WFH phenomenon. It is obvious that the great variety of topics, sectors, countries and cultures analysed in the WFH literature can produce an investigation based on various categories of employees, but make it hard to produce generalisable results applicable to a broad range of people. Thus, the question is: Is this diversity of cultures, countries and sectors harmful towards the overall effort to generalise the results of the research? The answer can be found in papers such as that concerning human influence on global

warming (Cook et al., 2013), which is further analysed in the research methodology chapter. In that research, it is mentioned that, when the significant majority (97 per cent) of 11,944 abstracts of published work agree that global warming is the result of human activity, then this sum of evidence can be considered as significant proof of the existence of this problem. Similarly, when isolation is mentioned by call-centre operators in Italy (Valsecchi, 2006), by self-employed workers who live in rural areas of the UK (Wilks and Billsberry, 2007), by teleworkers (internet users) in the Netherlands (Vermaas and Bongers, 2007), by directors of a consultancy firm (Lai and Burchell, 2008), by European management consultants (Whittle and Mueller, 2009) and by employees with disabilities (McNaughton et al., 2014), then it can be claimed that there is strong evidence to generalise that this isolation can present a problem to the effective implementation of WFH policies. Again, the rationale behind the construction of Appendix 2, and this long discussion around the variety of topics included – as was also the case with Appendix 1 – are aimed at highlighting the many different angles of the WFH phenomenon. The next Section 2.4 will focus on the profession of CRAs and the clinical-trials framework within which they operate as this research aims to explore the reality of their working lives.

2.4 Clinical Trials and Clinical Research Associates

2.4.1 Investigating Clinical Research Associates

The examination of CRAs, the second component of this research, is the main contribution of the research. First, this is because CRAs mainly work from home. Second, they are an expanding group in the working population and

have an important role in the overall process of the clinical trials. They are also an important group of professionals who are involved in the monitoring process of the development of new drugs and/or pharmaceutical devices. CRAs are used to cover the need for safeguarding wellbeing of clinical subjects as local regulatory authorities (Medicines and Healthcare products Regulatory Agency, 2012) and global good-clinical-practice standards (International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use, 1996) demand. They are a group of professionals who have an extremely important role in the pharmaceutical sector, yet according to this research, there is limited literature about them. In particular, CRAs who work in Britain and the reality of their working lives have not been explored in the past, despite their importance in the British pharmaceutical sector overall. Indeed, in 2009, the UK was the second most innovative country in the world (the USA was the first) in the fields of biology and medicine according to the annual number of publications (Herper, 2011). In this expanding and innovating pharmaceutical market, CRAs who work in the UK are a group that are certainly worthy of exploration and this is why they are placed at the core of this research project. The CRAs' importance in the whole process of developing clinical trials will be further elucidated when their duties and role are presented in-depth in later parts of this chapter.

The origins of the CRA as a profession are not clearly recorded, whilst according to this research, there are no accurate statistics about the exact number of professionals who work as CRAs in the UK. Even the classification of the CRA profession in ONS tables is arguably inaccurate since the profession of 'Clinical Research Associate' or 'Clinical Trials Monitor' is classified under the

subcategory of 'Biological Scientists and Biochemists (code 2112) (Office for National Statistics, 2015a). Therefore, this research project can be viewed as of further significance in operating as a first step for 'mapping' this profession in the UK.

According to the researcher's primary research⁴, the first non-medical personnel (the job title was 'medical adviser' or 'scientific adviser' and was the predecessor of today's CRA) to be involved in monitoring was hired in the early 1980s in the UK and five to ten years earlier in the USA; non-medical staff came to substitute doctors who were working as monitors since doctors were more expensive to hire and less effective as they paid less attention to the bureaucratic details of the clinical-trials process. All three most recent and influential documents [ICH-GCP 1996, Clinical Trials Directive 2001/20/EC and The Medicines for Human Use (Clinical Trials) Regulations 2004, Statutory Instrument 1031] that focus on the ethical principles and good clinical practice of the clinical-trials process regard monitoring as an important aspect of the whole route but do not specify the manner of doing it or the staff that should be involved in it. Finally, CRAs, the most common name for monitors in the pharmaceutical industry (Illingworth, 2001), need to be examined as the global population of CRAs (estimated at 22,000 to 25,000 employees) has been increased whilst their job has become more demanding in the last 15 years as a result of the increase in the volume of trials, the global spread of research activity and the increasing complexity of study protocols (Tufts Center for the

⁴ The source of this information is a personal interview with the director of the organisation investigated in this research and was conducted in 2013 in her office. Her experience was significant in supporting this information about the historical background of the CRA profession as at the beginning of her career she was one of the first non-medical CRAs working in clinical trials in the UK. Her title then (early 1980s) was 'Medical Adviser'.

Study of Drug Development Impact Report, 2012). The following section will start with some historical information about clinical trials as the reader needs to understand the historical process which has led to the need to use CRAs to monitor clinical research.

2.4.2 The History of Clinical Trials

The word clinical originates from the Greek word '*kline*' (κλίνη) which means bed (Piantadosi, 2005). The idea of experimentation on human beings was known to ancient Greek physicians whilst the Hippocratic Oath underlined the need for morality in the practice of medicine (Piantadosi, 2005). Page (2012: xi) recognises, as the motivation to conduct clinical research, the old Aristotelian concept that '*all men by nature desire knowledge*'. In medieval times, Avicenna (A.D. 980-1037), in his book '*The Canon of Medicine*', created some rules for the experimental use and testing of drugs on humans in relation to drugs' effectiveness (Machin and Fayers, 2010). During the Renaissance, surgeon Ambroise Paré poured boiling oil over soldiers' wounds during the battle for the conquest of the castle of Villaine in 1537, but when he ran out of oil he used a blend of egg yolk, turpentine and oil of roses, which created greater relief for soldiers (Day and Ederer, 2004). In 1747, as a result of a comparative, planned and controlled clinical trial, the Scottish physician James Lind found that lemons and oranges were more effective than other dietary treatments for patients with scurvy on board ships (Day and Ederer, 2004). Despite the fact that the pharmaceutical industry has its origins in the early 19th century (Hall, 2001), it was in the late 19th and early 20th centuries that scientists discovered that

many diseases were cured without treatments or that existing treatments were insufficient, creating major doubts about the effectiveness of the therapeutics of the time (Piantadosi, 2005). Later achievements, such as the relief of symptoms of pellagra and diabetes through the use of medicines and the discoveries of penicillin and sulphanilamide, ended the period of disbelief on the scientific character of therapeutic methods (Piantadosi, 2005).

Experimentation on humans is as old as the development of medicine itself, whilst many experiments have been conducted without concern for the wellbeing of the subjects (Day and Ederer, 2004). In the 19th century, studies in Russia and Ireland examined the consequences of infecting people with syphilis and gonorrhoea, whilst in the same period in the USA, physicians put slaves in pit ovens to examine heat stroke, or poured hot water over them as a tentative treatment for typhoid fever (Day and Ederer, 2004). Even in the 20th century, such unethical trials continued. In 1932, the US Public Health Service started a trial in Tuskegee, Alabama, in which 400 black syphilis patients, were observed for the progression of the disease without receiving the appropriate treatment; this trial ended in 1972 when a newspaper wrote about this malpractice (Day and Ederer, 2004). During the Nazi regime, German doctors performed medical atrocities on Jews, Russians, Poles, Gypsies and mentally disabled people, who were inmates of concentration camps (Weindling, 2008; Day and Ederer, 2004; Piantadosi, 2005). As a result of these atrocities, 23 German scientists and administrators were charged with war crimes and crimes against humanity in the Nuremberg Trials and in August 1947 16 of them were convicted and seven were sentenced to death (Weindling, 2008). Judges at the trial suggested 10 principles of ethical conduct for experimentation on humans and these

principles, named the Nuremberg Code (Appendix 3), were the first international standard for clinical trials (US Government Printing Office, 1949). The strength of this code was that it was based on natural law and human rights and was a first effort to present the need for informed consent, but its main weakness was that it offered limited clinical guidelines to civilised physicians as it was designed by American military judges to respond to Nazi medical atrocities (Annas and Grodin, 2008).

The modern history of clinical trials started with the publication in 1948 by the UK Medical Research Council (MRC) of a trial for the cure of pulmonary tuberculosis with streptomycin; although there were earlier studies, this was the best documented trial (Day and Ederer, 2004). The Medical Research Committee was created by the UK Government in 1913 and it was renamed the Medical Research Council in 1919. The main aim of the MRC, from the early 1920s, was to advance and sponsor biomedical research (Austoker and Bryder, 1989). Although trials after the publication of the Nuremberg Code started to have a more scientific and humanitarian approach, high-profile mistakes were still made in the history of medical experimentation. For example, in 1963, at the Jewish Chronic Disease Hospital in Brooklyn, New York, 22 debilitated elderly patients were injected with cancer cells; the aim of this trial, to examine if the patients' immunological deficiency originated from these cancer cells or from their pre-existing poor medical condition, raised ethical considerations (Arras, 2008). In 1964, in Helsinki, the World Medical Association (WMA), an association of national medical associations founded in Paris in 1947 with the aim of achieving high standards for all the medical world, adopted the Declaration of Helsinki, the most significant guideline in world medical research

(Ashcroft, 2008). This declaration, and its subsequent nine amendments (Tokyo, 1975; Venice, 1983; Hong Kong, 1989; Somerset West, 1996; Edinburgh, 2000; Washington, 2002; Tokyo, 2004; Seoul, 2008; Fortaleza, 2013), is a sum of ethical rules for medical research in human subjects including research on identifiable human material and data (World Medical Association, 2013).

In 1962, in the USA, for the first time in history, new amendments to the Food, Drug and Cosmetic Act required researchers to inform all subjects of drugs trials and patients to give written consent before participation (Blacksher and Moreno, 2008). In 1977, as a result of concerns about the quality and accuracy of some of the data of clinical trials submitted to the regulatory authorities as part of the registration of new drugs, the first Good Clinical Practice (GCP) guideline was defined in the USA (Soul-Lawton and Kroon, 2000). In 1996, the International Conference on Harmonization (ICH) guideline on GCP (i.e. ICH GCP, 1996) was a document aimed at being a unifying standard for the EU, the USA and Japan, acceptable by all regulatory authorities in these territories; this document was formulated as a reflection of the existing good clinical practices of the EU, the USA and Japan, as well as those of Canada, Australia, the Nordic countries and the World Health Organisation (WHO) (Soul-Lawton and Kroon, 2000). In 2001, the Clinical Trials Directive 2001/20/EC aimed to provide a harmonised approach to the approval and conduct of clinical trials in the EU and to ensure that the well-being, safety and rights of subjects were not in danger and that the results of clinical trials were reliable enough to change marketing and prescribing behaviours (Medicines and Healthcare products Regulatory Agency, 2012). The existing linguistic differences among countries

inside the EU was another reason which created the need for harmonisation. For example, the word 'protocol' is a word which is future-related in English whilst in German it is past-related and this difference creates problems in the understanding of documents (Ogg, 2006). The Clinical Trials Directive came into force in May 2004, whilst in the UK, the legal requirements were attained by the Medicines for Human Use (Clinical Trials) Regulations 2004, Statutory Instrument 1031. Despite the fact that later amendments (2006, 2006b, 2008, 2009, 2010) exist, SI 2004/1031 is the main legal reference for conducting clinical trials in the UK (Medicines and Healthcare products Regulatory Agency, 2012). It describes the procedures for regulatory and ethical reviews of medicinal products that will lead to Clinical Trial Authorisation (CTA) and a positive Research Ethics Committee (REC) opinion, whilst giving guidelines (GCP) for inspection and enforcement during the whole period of the trial (Medicines and Healthcare products Regulatory Agency, 2012). Having presented the existing regulatory and ethical framework of clinical trials, the next section will focus on the development of the process leading to the creation of a new medicine.

2.4.3 Development of a New Medicine and CRAs

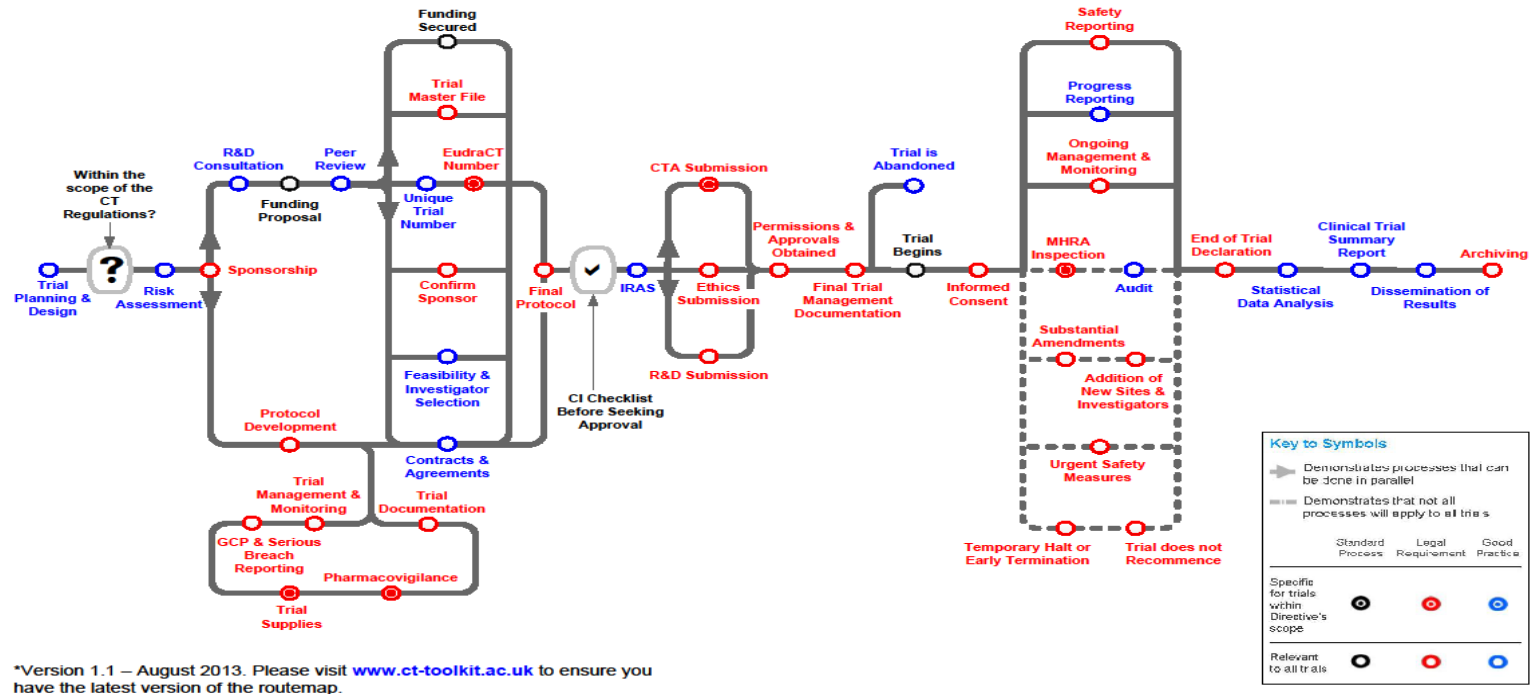
The process of a clinical trial starts in the labs. For every 10,000 chemical compounds screened, 1,000 have a biological activity, 10 will be administered to humans for experimentation and only one will reach the marketplace (Hall, 2001). From the time that a compound is registered and drugs are safe to be released and put on sale, five to 10 years of exclusive patent life have to be

enough to cover the Research and Development (R&D) costs of the specific drug and all previous failures before the entry of generics abolishes the monopoly's privileges. As generics are cheaper and of the same efficacy as prototypes, patients, hospitals and the NHS will prefer them (Hall, 2001).

The long process of a clinical trial starts from trial planning, risk assessment, protocol development and other initial stages of preparation. It then continues to the approval, initiation and main stages of and ends with the final stages of the clinical-trial summary report, the dissemination of results and archiving. According to the current thesis researcher's primary research, CRAs' involvement may start at the preparation stage, particularly with obtaining the EUDRACT Number, with feasibility and investigator selection, with contracts and agreements, with the Clinical Trial Application submission and with the Ethics and R&D submission stages (Othonaiou, 2013). CRAs' main responsibilities start with the beginning of the trial; they participate in the initiation visit, in ongoing management and monitoring, in possible MHRA inspections, in substantial protocol amendments, in the addition of new sites and investigators, in urgent safety measures and finally in the end-of-trial declaration (Othonaiou, 2013). Key CRA monitoring activities can include the monitoring of Case Report Forms (CRFs) and source data, facilities and equipment and documentation, the training of investigator site staff, as well as monitoring the Investigational Medicinal Product (IMP), the informed consent, and the subject-safety and protocol compliance (Medicines and Healthcare products Regulatory Agency, 2012). Figure 2, on the following page, contains the full route-map with all stages of a clinical trial as described by the NHS on its official website (NHS National Institute for Health Research, 2015).

Figure 2: Clinical Trials Route

The Clinical Trials Toolkit - Routemap



Source: NHS National Institute for Health Research (2015)

2.4.4 The Development of the CRA Profession

As part of the highly regulated pharmaceutical industry, clinical trials have to be compatible with national laws, EU Directives, the Declaration of Helsinki (International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use, 1996), regulatory authorities and local GCP guidelines (Hall, 2001). A significant part of the monitoring of this compatibility is performed by CRAs who can be direct employees of the pharmaceutical company which conducts the study (the sponsor), cooperate as freelancers or belong to other Contracted Research Organisations (CROs) that conduct the research on behalf of the pharmaceutical company. The use of CROs in the clinical-trials process has been growing since the 1990s; since that period, pharmaceutical companies have started to outsource entire studies or development projects and/or use in-house temporary contracted staff (Hall, 2001). CRAs, no matter what their employment-relation status is, are the key representatives of the sponsor (the pharmaceutical company which conducts the clinical trial) on medical sites and are responsible for the greatest part of the monitoring process. The International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (1996: 6) defines monitoring as:

'... the act of overseeing the progress of a clinical trial, and of ensuring that it is conducted, recorded, and reported in accordance with the protocol, Standard Operating Procedures (SOPs), Good Clinical Practice (GCP), and the applicable regulatory requirement(s)'.

Appendix 4 includes the full list of the monitor's responsibilities. According to this guide published by the International Conference on Harmonisation of

Technical Requirements for Registration of Pharmaceuticals for Human Use (1996: 26), monitors who are appointed by the sponsor:

'... should be appropriately trained, and should have the scientific and/or clinical knowledge needed to monitor the trial adequately. A monitor's qualifications should be documented. Monitors should be thoroughly familiar with the investigational product(s), the protocol, written informed consent form and any other written information to be provided to subjects, the sponsor's SOPs, GCP, and the applicable regulatory requirement(s).'

In order to demonstrate another side of the profile of the CRA employee, a pilot primary research was conducted online to specify the job characteristics. A search on LinkedIn's jobs within a 50-mile radius of a London postcode, using the word 'CRA', resulted in 23 clinical job vacancies; nine of these were from nine different CROs who searched for CRAs or Senior CRAs (SCRAs) (28th April 2013). Regarding the advertised recruitment specifications for prerequisite education, four CROs were asking for a degree in life sciences, four for a degree in health or nursing studies, two for medicine or biology degrees, one for a pharmacy degree, one for a degree in science, one for a degree in physical sciences, one asked merely for a bachelor degree without any other clarification and one advertisement had no details or description of any qualifications needed. Regarding experience, all advertisements asked for 1-4+ years of monitoring experience and some asked for knowledge of certain medical fields while none of them clarified salary details.

Finally, a worldwide research on the development of CRAs provides important information about the characteristics of their job (Tufts Center for the Study of Drug Development Impact Report, 2012). According to the Tufts CSDD report (2012), CRAs' typical workload can include on-site (41 per cent of total time is spent on visits to medical premises) or off-site monitoring (22 per cent of their

time is spent on preparation for visits, monitoring data remotely, writing reports and following up on visits), travelling (19 per cent of total working time), administrative tasks (13 per cent of total time) and training (five per cent of total time). The global average for working hours is 165 hours per month, whilst Western European employees work 143 hours per month, 35 hours fewer than their US colleagues, and monitors of pharmaceutical and biotechnology companies work 14 hours more per month than their colleagues who are employed by CROs (Tufts Center for the Study of Drug Development Impact Report, 2012). European (both Western and Eastern) CRAs spend 30 per cent fewer hours on on-site visits than CRAs in North America and also spend significantly less time travelling (Tufts Center for the Study of Drug Development Impact Report, 2012). The global average period for experience in this profession is 6.3 years, whilst Western Europeans have an average monitoring experience of 6.6 years. Finally, 53 per cent of the global population rate their work-life balance positively, whilst 49 per cent of Western European CRAs describe it as good or excellent (Tufts Center for the Study of Drug Development Impact Report, 2012).

The whole 'Clinical Trials and CRAs' section of the current Literature Review chapter aims to demonstrate the clinical-trials sector and the CRA profession as these are significant components of the different home-based working environment that will be explored later in Chapter 4. It was considered important at this point to inform the reader about historical data of the evolution of clinical trials and the CRA occupation as these characteristics of the sector and the occupation will create a different insight into the WFH phenomenon, which will

be presented later on in the Data Analysis chapter. The next section summarises the two sections presented above.

2.5 Conclusion

In this chapter, emphasis has been placed mainly on the presentation of WFH and telework and on the historical development of their literature. Emphasis was also given to the development of clinical trials, drugs development and the emerging role of CRAs. The chapter started with the justification for the current research and continued with the presentation of the WFH literature with emphasis on the benefits and drawbacks of implementing such a model of work on organisations and people. The presentation of the existing literature started with an effort to define the phenomenon of WFH and to offer information about the history of WFH since Nilles's (1975) initial introduction of the telecommuter. There was then a three-dimensional analysis of the phenomenon as seen by the employer, the employee and society as a whole with emphasis on the positive contribution of WFH for all three stakeholders. From the employer's perspective, the key aspects mentioned were organisational benefits, such as improvement of performance, productivity, recruitment and retention rates, motivation, psychological empowerment and commitment, reduction of operating costs and absenteeism and continuity of services during adverse weather conditions, transport strikes or terrorism. From the employees' perspective, telework was presented as a strategy that reduces commuting time and parking, childcare and food costs, improves WLB, decreases WFC and

stress and offers control and autonomy, whilst benefiting society through having a positive effect on the environment and increasing employment in areas with high unemployment rates. Finally, successful implementation of telework plans was presented as a strategy which depends on aspects such as managerial views of control, visibility and presence, organisational and national culture and tradition, training plans and IT improvements. The chapter continued with a brief presentation of important milestones in technological progress in an effort to help the reader to understand the existing technology at different periods of the WFH literature. The first part of the chapter, which focused on the WFH literature, finished with the mapping of an important part of the critical literature and a look at how this has been shaped through the years.

The second section focused on the clinical-trials environment and on CRAs. CRAs are the home-based employees that will be investigated in this research. They were presented in this chapter as members of an important profession with a key role in the development of new drugs and exploration of the role of the CRA will be the main contribution of this research as there is no existing literature that covers this group of professionals. Later on, all these aforementioned elements will be matched with the research's findings in order to evaluate their appropriateness and their contribution as the thesis investigates and explains the WFH phenomenon from the clinical-trials perspective.

To sum up, this chapter covered all significant topics in the 41 years of WFH publications. Although many of the topics were mentioned to offer the reader a broader picture of existing academic interests and to map the overall framework of the phenomenon, the present research focuses on five important angles of

CRAs' everyday work. The following table contains these five main topics which are the core focus of the current thesis research's investigation.

Table 5: Themes for Discussion

- | |
|---|
| <ol style="list-style-type: none">1. Work-Life Balance (WLB)2. Cost Reduction3. Implications of ICT4. Employees' Performance5. Remote Management/Supervision |
|---|

However, before presenting the findings concerning these factors of the WFH phenomenon, there is a need to discuss the research methodology used in the present research. Thus, the next chapter will examine the rationale and reasons behind the chosen research methodology.

CHAPTER 3

3.0 Research Methodology

3.1 Introduction

The Research Methodology chapter begins with the background to the organisation and a look at its characteristics. This is viewed as important in explaining the rationale behind the decision to choose this organisation for the research and also in highlighting the significance of its presence in the field of clinical trials. In addition to the characteristics of the organisation, a considerable part of the subsequent second section of this chapter focuses on the role of the researcher as a member of staff, who researches the organisation in which he works. Based on deductive logic and an analysis from general to particular (Hart, 1998), the rest of the Research Methodology chapter starts from the recording of the ontological and epistemological principles of the research and ends with the reflections of the researcher. These ontological and epistemological principles (i.e. the philosophical framework of the research) are the focus of the third section of the chapter. The fourth section focuses on the research design with an explanation of the case study as this is the chosen research strategy, whilst the fifth section describes the range of research instruments used. Section 6 covers the data-analysis methodology used with the focus on the theoretical background of the grounded theory. The seventh section covers the sampling of the research with an overall description of the whole process from the recruitment of the participants to the technical characteristics of the place where the interviews were conducted. The eighth section defends the quality of the research and, in particular, highlights the

validity and reliability of the data with the focus on using the argumentation of influential social scientists in the field of research-methodology design. Section 9 discusses the role of the researcher in relation to the validity. It is important here to highlight that his presence as a member of staff did not have a negative influence on the validity of the findings. The tenth section focuses on the benefits of the research with the most important part covering the transferability of the findings. The 11th section gives a picture of the ethical framework in which the research was conducted and the final section includes the researcher's reflections with the aim being to uncover the researcher's concerns about any obstacles faced during all stages of the research.

The following section starts with a look at the background of the organisation under examination.

3.2 The Organisation and the Role of Researcher

'I don't like to discuss my marriage, but I will tell you something which may sound corny but which happens to be true. I have steak at home. Why should I go out for hamburger?'

Paul Newman (Lewis, 2014)

The organisation which employs the researcher and is under examination is a large, world-famous academic institution in London, part of the Russell Group and University of London. In a partnership with three large London NHS trusts, it created an office, funded by all four partners, which organises and sponsors clinical trials of commercial and non-commercial medical studies. The size and reputation of the organisation worked as an attraction for the focus of this

research and made the researcher realise that the organisation could be used as a basis for an in-depth case study. This organisation, which very often creates international research standards in medical research, employs many clinical-trial professionals, most of whom work from home. As working from home and clinical-trial professionals are the two main topics of this thesis, this organisation presented a good opportunity to investigate these two topics as it offered access to a group of CRAs. Therefore, its reputation, and the general lack of access constraints that the researcher's presence in the organisation offered, can be characterised as the two primary reasons for choosing to study and research this organisation.

For confidentiality reasons, this large academic institution will be named 'Olympus' and the office which is the target entity of this research will be named 'Garden'. 'Olympus' has been chosen as a name to describe an authoritarian, classic and bureaucratic academic organisation. The name 'Garden' has been adapted from communities established in ancient Greece by Epicurus on the outskirts of Athens (Hutchinson, 1994). Epicurus's 'Garden' was a type of academy in which his philosophy was taught to a diverse group of followers including:

'... household servants and women on equal terms with men, which was completely out of line with the social norms of the time...' (Hutchinson, 1994: xi)

Similarly, our Garden is a progressive working place operating inside a traditional hierarchical academic environment. It is important to highlight that creating a partially virtual office inside an old-fashioned working environment is not something common; despite the overall expansion of WFH in recent years (4,218,699 employees currently work from home in the UK), the percentage of

employees who work from home in the public sector is still low (8.0 per cent in health and 7.1 per cent in education) (Trades Union Congress, 2015a). However, as already highlighted, different authors use different definitions of WFH and, as a result, it is hard to be accurate about the size of the phenomenon.

Garden is a recently developed department (created in 2007) which aims to cover a gap in the structure of all four partners (one academic organisation and 3 NHS trusts) by organising high-standard clinical trials. Although all four institutions had a long history in the conduct of clinical trials, Garden is a joint initiative between the four partners, created to formalise the pre-existing collaborations among the four participants. In particular, clinicians from academia and NHS hospitals recruit patients and volunteers into local and international clinical trials on behalf of investigator-led and academic or private pharmaceutical and biotechnology companies' trials. The whole framework of organising the trials is developed by Garden. Garden does not belong to a specific academic faculty but its management is under the Research Management and Innovation Directorate of Olympus's Professional Services. Garden has two sections: the first is the Quality Team (Non-Commercial Clinical Trials) and the second is the Commercial Team. The Quality Team, to which the CRAs, as well as the trainers and the Clinical Trials Systems Executive, belong, aims to support investigators who work at the four institutions and who undertake clinical trials. The Commercial Team, which is fully office-based, offers a platform for those investigators, the staff of the four institutions, who want to participate in clinical trials sponsored by private pharmaceutical companies. Usually, Garden's CRAs are not involved in these trials as the

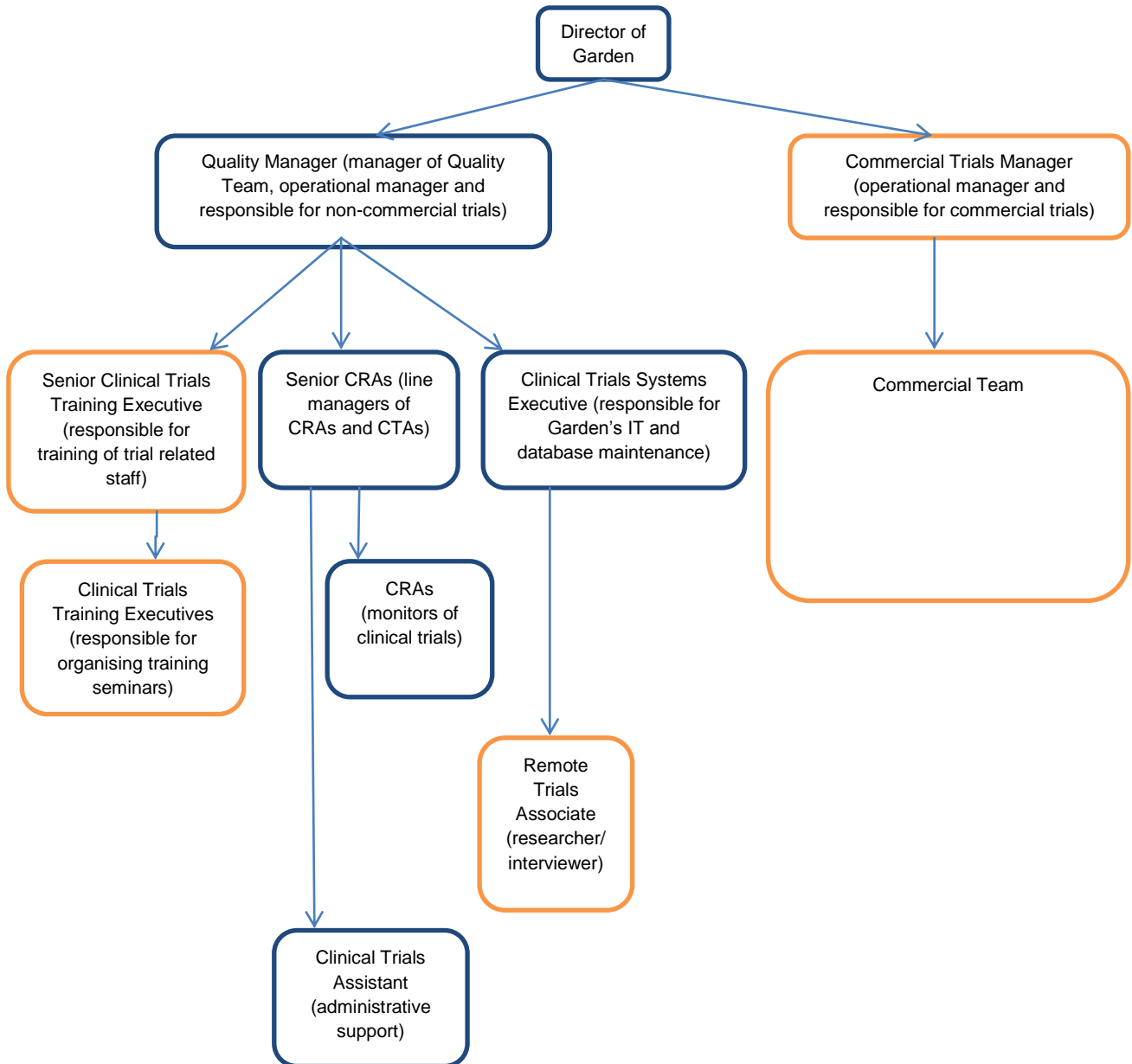
monitoring duties of the commercial trials are always organised by the sponsor company responsible for the trial. In the case of the commercial trials, the sponsors are the private pharmaceutical companies. As the staff of the Commercial Team does not have a direct or indirect relation with the CRAs, they were excluded from the data-collection process. Figure 3, on the following page, includes the organisational structure of Garden.

The researcher was hired by Garden as a Remote Trials Associate (RTA) before starting the data-construction process. As previously explained, the fact that he was working with many home-based CRAs was important for his decision to choose Garden for his research interests. Indeed, the management of Garden was happy to help the researcher and, as fully explained in Section 3.11 later on this chapter, both Garden and Olympus gave him approval for this research. His role as an RTA was similar to that of a CRA but with a smaller variety of duties, focusing only on remote monitoring (without external visits on site) and construction of Case Report Forms (CRFs) which are electronic databases in which all patients' medical information relative to the clinical trial is stored. The RTA's salary grade was five, one grade less than that of a CRA, and was office-based and non-managerial, whilst there was the option to work one day per week from home. The researcher conducted the main part of the research, the interviews, during the period that he worked as an RTA. During the data analysis, and after two years of working in the specific role, the researcher was promoted to the role of home-based CRA and thus obtained access to material (such as employment contract, training manuals, expense sheets, metrics etc.) relevant to the investigated profession; many of this new information turned out to be valuable in understanding and interpreting or

triangulating findings from interviews. The following section contains more information about the overall quality of the research.

Figure 3

Garden's Organisational Structure (employees who were interviewed are in blue rectangles)



3.3 Philosophy and Social Research

Hart (1998) starts the classification of research-design issues from the definition of the ontological and epistemological framework of the research and these aspects will be analysed in this section. Firstly, with reference to ontology:

'Ontology involves the study of theories of being, the questions we ask about what can really exist'. (Smith, 1998: 279)

In other words, ontology can be perceived as '*what reality is*' (Hart, 1998: 51) or, to be more precise, '[the] *vision* [that people have] *on reality*' (Elders et al., 2011: viii). Generally, ontology is concerned with the definition of reality whilst reality can be linked to objectivity and singularity (Hart, 1998). In all cases, from Aristotle's 'four causes' and his innovation of the idea of 'natural science' (Kalfas, 2007) (translated from modern Greek) to today's scholars, people have always claimed that they own a reality. Thus from an ontological point of view, the reality that this research claims is that of the 'realism' school of thought which has been perceived as an alternative to the traditional routes of positivism/empiricism and constructivism (Maxwell and Mittapalli, 2010). In particular, according to Hart (1998), reality can be perceived as being uninfluenced by perceptions and cultural bias, or alternatively as a construction based on previous understanding and assumption. Generally, from a philosophical perspective, realism is aligned with the traditional secular and rational forms of knowledge of the Enlightenment era (Morris, 2003), whilst any position which claims the existence of some doubtful kind of entity, such as causal laws, numbers, propositions, probabilities, material objects and universals, can be characterised as 'realist' (Bhaskar, 1986). Realism has been chosen for this research approach, for it can be perceived as a scientific way

which avoids problems sourced from purely positivist or relativist accounts (Robson, 2011). Indeed, realism shares common ideas with positivism, such as the belief that natural and social science can share common approaches for collecting and explaining data and that there is an external reality separated from our descriptions (Bryman, 2012). Despite our descriptions and perceptions, there is an external reality of work of a common 9am-to-5pm schedule in an '*office world*' (Bratton and Gold, 2012), somewhere in a highly commercialised area such as London, which actors have to reach after a very often expensive (Transport for London, 2015) and time-consuming effort (Massey, 2014) as very often loyalty is linked with the employee's physical presence (Benko and Weisberg, 2007). Even if, theoretically, technological innovations have managed to resolve the need for physical presence by offering a wide powerful communications net, people still choose to work together in a common location. The whole idea of a centralised workplace, which starts from very early years of human creativity, is under critique in this research. To be more specific, this research challenges the notion that the 'office workplace' should be the dominant way of working as ICT innovations and dramatic social changes have abolished the need for employees to be physically present in a centralised workplace. Indeed, this research examines whether decentralisation (WFH in this case) can be an alternative form of working reality, even a preferable one for both employees and organisations. The critical analysis that follows is the core of the epistemology of the present research.

Epistemology tries to answer the 'how we know what we know (theories of knowledge)' question and to define what can be accepted as real (Hart, 1998;

Bryman, 2012; Elders et al., 2011). Epistemologically, this research fits within the 'critical realist' approach as its rationale focuses on the idea that:

'... the study of the social world should be concerned with the identification of the structures that generate the world. Critical realism is critical because its practitioners aim to identify structures in order to change them...' (Bryman, 2012: 712).

In 1975, philosopher Roy Bhaskar, with his *A Realist Theory of Science* started the construction of critical-realism theory (although he is not the author of the word 'critical', he accepted the use of this term by others who based their work on his ideas) (Collier, 1994). He initially used the term '*transcendental realism*' to describe that structures and mechanisms generate phenomena and the production of knowledge (Bhaskar, 2008) (originally published in 1975) . Based on this assumption, this research tries to identify the social structures of the WFH phenomenon in clinical trials and, if possible, to suggest changes which will improve people's working reality by changing the idea of what is considered a 'normal' workplace.

The WFH phenomenon is explored in depth as very often structures may not be amenable to the senses where reality is not as it looks; contradictory to positivism, the critical-realism approach is not based on empiricism (Bryman, 2012). Indeed, critical realism, in this research, can be perceived as a third stream between 'naïve' positivism and poststructuralism (Denzin and Lincoln, 2011), whilst generally, it questions the necessity and universality of law-like statements (Bhaskar, 1994) which, in this case, are related to the examined workplace's practices and behaviours. Generally, critical realism:

'...holds that an (objective) world exists independently of people's perceptions, language, or imagination. It also recognises that part of that world consists of subjective interpretations which influence the ways in which it is perceived and experienced. This double recognition is

important and relatively novel in social science.' (O'Mahoney and Vincent, 2014: 2-3).

Accepting the existence of both objectivity and subjectivity, this research sails between the Homeric Scylla and Charybdis, naive positivism and pure constructivism. The author accepts as objective reality that people have social needs (Alderfer, 1969; Maslow, 1943; Maslow, 1970) and thus very often live together under the same roof to cover them. Another objective reality is that people need to reproduce to continue the human species and, as a result, they have children who need childcare. From an economic perspective, particularly economies of scale, in most cases, this human population growth brings an increase in the supply of labour and in entrepreneurial ability (McConnell and Brue, 1993) and is thus considered objectively as another positive factor for the desirable overall wealth. To support this argument by using classic economics, '*when employment increases, aggregate real income is increased*' [Keynes, 1964: 27 (originally published in 1953)]. Generally, higher consumer income leads to an increase in the quantity demanded whilst an increase in demand has been associated with an increase in prices (Begg et al., 2014). Therefore an increase in prices (and profitability) will lead to an increase in employment, which is considered an overall desirable situation for society. It should perhaps be noted here that the rationale behind the decision to present this long list of realities is linked with the need to construct the objective realities of this research. The necessity to cover personal needs and also to increase population, employment rates and personal income are considered by the researcher as objective realities which need to be examined. It is important to remember that one of the main reasons why family-friendly policies were introduced into the UK working environment in the 1980s was to cover skill

shortages by making it easier for women (mainly those with children) to join the workforce (Lewis and Dyer, 2002). In other words, working, having children and having a happy balanced life are considered necessary and objective realities for this study.

On the other hand, the 9am-5pm or five-day week working framework, the need to commute at peak hours, the dress code, the necessary personal adjustment to organisational culture, the career dilemmas, the struggle to combine a family-work life balance with personal ambitions, the stress of work linked to direct supervision and the ready meals from the local canteen cannot be perceived as an objective reality but as stereotypes and norms that are challenged. The author believes that all these are parts of a constructed reality that cannot be perceived as an objective necessity. There are many cases of significant milestones which caused epochal changes, altering the definition of 'objective' reality. To give an example, one hundred years ago, the First World War and the urgent need for labour forced women to work temporarily – and, after the Second World War, permanently – at factories, outside their household, to replace men who had left to join the armed forces (Hobsbawm, 1996a), abolishing the 'objective' reality that only men go to work. Technological innovations and consequential social changes can again transform the norms of the workplace and build new stereotypes and beliefs for what is 'appropriate' and 'normal' at work. To give a further example, it was the French Revolution and the (British) Industrial Revolution and the reforms in society which occurred during the period from 1789 to 1848 that created the terminology and meanings of today's common words such as 'industry' and 'industrialist', 'factory', 'working class' and 'middle class', 'aristocracy', 'nationality', 'scientist', 'economic crisis',

'liberal', 'conservative', 'capitalism' and 'socialism', 'ideology', 'strike' and 'pauperism' (Hobsbawm, 1996b). Similarly, now, the massive technological innovations, and in particular the invention of the internet and the unique global accessibility that it offers, can change the established reality of what is called the workplace. In particular, the wide expansion of internet and broadband are considered by the author as fundamental for the establishment of the world's new reality. To repeat, a world, which according to O'Mahoney and Vincent (2014: 2-3):

'... consists of subjective interpretations which influence the ways in which it is perceived and experienced'.

After the explanation of critical realism as the dominant epistemology of this research, this chapter will now turn to the research-methodology design.

3.4 Research Methodology Design: The Case Study

The chosen research strategy of this is a single case-study approach. Definitions of 'case study' vary as different authors have presented it as '*an individual unit*' (Flyvbjerg, 2011: 301), '*a single case*' (Bryman, 2012: 709), '*a unit of human activity embedded in the real world*' (Gillham, 2000b: 1), '*a spatially delimited phenomenon (a unit) observed at a single point in time or over some period of time*' (Gerring, 2008: 19), '*a real life, contemporary bounded system (a case)*' (Creswell, 2013: 97) or '*an empirical enquiry that investigates a contemporary phenomenon (the "case") in depth*' (Yin, 2014: 16). Despite the fact that the case study has not been used a lot in critical realist

research (Brown and Roberts, 2014), its contribution in producing knowledge can be considered as granted as it has been used a lot in the past by social scientists. The case study has been chosen as a method of research because of two main reasons. First, the researcher's presence inside an organisation which operates with many home-based employees solves many practical access problems (as a member of staff, the researcher obtained permission to be granted access to data and potential participants). Second, the case study has been chosen as a relevant method to use when, as in this research, why or how a social phenomenon works are important research questions, there is limited or no control of behavioural events and the focus is on contemporary events (Yin, 2014). Indeed, Yin's (2014) and Edwards et al.'s (2014) works were very influential for the construction of this Research Methodology chapter. In particular, Yin's ideas are used to cover mainly the 'realistic' part of the research; from a positivist approach, he suggests that:

'... much of case study research as it is described in this book appears to be oriented toward a realist perspective, which assumes the existence of a single reality that is independent of any observer'. (Yin, 2014:17).

Alternatively, Edwards et al.'s (2014) guide is used as a fresh view of the 'critical' part of this research. As mentioned previously, the '*world consists of subjective interpretations*' (O'Mahoney and Vincent, 2014: 2) and these different perspectives of reality cover the 'critical' part which is analysed in-depth in the chapters Four and Five, the Data Analysis and Discussion chapters.

After defining the type of research design used, it is useful to justify the rationale behind the decision to choose this methodology. In a narrative approach, the story of the research design is presented in the following paragraph.

The initial methodological plan was to use a mixed-methods approach and, in particular, a sequential exploratory strategy starting with a qualitative data collection (unstructured interviews) and analysis and ending with a quantitative data collection (questionnaires) and analysis (Creswell, 2009). From the very beginning of the research, it became obvious that there were limitations of time and issues of access which narrowed down the overall potential coverage of this research. First, the author managed to contact only people who currently work or who used to work for his current employer. Any effort to contact previous or unknown employers to assist with the qualitative part of this research (basically, to offer their time for an interview) had no fruitful results as potential participants did not show any interest in contributing to academic research. Soon after the commencement of this research, it was clear that, the construction of the first part of the sequential mixed-methods research would be based only on one organisation. According to Yin (2014), many social scientists unreservedly consider that the case study is only appropriate for the initial exploratory stage of an investigation and this general problem of the generalisability of a case study will be discussed later in this chapter. Similarly, initially, the researcher considered interviews of participants from only one organisation as a preliminary exploratory stage to understand the phenomenon; to support this idea, the first plan was to use unstructured interviews to give the opportunity to interviewees to express their ideas and to uncover topics missing from the interviewer's perception, which would be analysed and triangulated at the next stage. However, this exploration of data collection with a 'loose' agenda of topics and questions seemed very risky as there was only one opportunity to interview the majority of these experts in clinical trials. In contrast, the researcher had a clear

picture of the structure and the research and the topics/questions that would be covered in the interview process. Thus, semi-structured interviews, which contained open explanatory questions, became the preferable and mainly adopted method to gather data as this type of question can be comparable (Guthrie, 2010) and can improve consistency for data control in groups (the following Section 3.5 contains a more in-depth analysis and justification of the research instruments used).

From the beginning of the qualitative data gathering, the researcher was aware that he had access to a large amount of data which could offer in-depth analysis and create all the necessary data to build a case-study research. Interviews, participants' demographics, observation, guidelines from the organisation's official website etc. were available and could offer an integrated and satisfactory analysis of the WFH phenomenon. However, the difficulties which the researcher faced during the search for participants for interviews made him realise that the plan to collect quantitative data (through questionnaires) from a large sample of CRAs after the end of the qualitative (interviews) phase was not realistic. For example, the researcher, in the first quarter of 2013, tried to gain access to 10 large pharmaceutical companies (in alphabetical order: Abbott, Astra Zeneca, Bayer, GSK, Johnson and Johnson, Merck, Novartis, Pfizer, Roche, Sanofi) by sending an email to their local (UK) and/or global electronic contact address to request assistance with access, using his student-researcher identity, for help with his research and to ask for information about the origin of the CRA profession in their company. Not a single organisation replied to the researcher's email, strengthening his perception that he should not wait for the assistance of pharmaceutical companies. It became obvious that research

based on a large scale of participants was not feasible but that an in-depth collection of data could be achieved.

At this point, it should be clearly stated that the whole project has been analysed based on the methodology of a case study, not of an ethnography, despite the author's presence inside the organisation. The main reason that this project cannot be perceived as ethnography is that, in ethnographic studies, the methodology focuses on a team's activities which naturally occur (Crabtree et al., 2012). As Bryman (2001) describes it:

'Ethnographers immerse themselves in a society to collect descriptive data via fieldwork'. (Bryman, 2001: x)

In CRAs' case, the data collection (both from interviews and secondary data) is very structured, whilst the everyday ordinary working life of participants cannot be observed as they spend most of their working time at home without allowing the observer to follow Bryman's (2001) description and 'immerse' himself in their society. The next section focuses on the research instruments used in the thesis.

3.5 Research Instruments

Yin (2014), in his effort to describe the data-collection process in a case study, suggests six common sources of evidence. Table 6 contains these six sources, enriched with the specific tools available for this research. The analysis of all these sources of evidence starts with the interviews.

Table 6: Sources of Evidence

Source of Evidence	Adopted Method
Interviews	Semi-structured interviews.
Documentation	<ol style="list-style-type: none"> 1. Personal agenda and diary (mostly Microsoft Outlook Calendar). 2. Personal employment contract (for CRA role). 3. Olympus's guideline for working from home and ergonomics (internal website). 4. CRA training manual. 5. Metrics form. 6. Expenses form. 7. Personal evaluation form (appraisal). 8. Personal emails. 9. TeamSeer (Holiday & Absence Management Online Platform). 10. Other CRA documents.
Archival Records	Garden's Absence & Holiday spreadsheet (2012 & 2013).
Direct Observation	Researcher's observation on managers & CRAs' presence (as well as non-physical presence) in the office (most information is the result of the researcher's observation during his RTA role).
Participant-Observation	Researcher's observation as part of a team (most information is the result of the researcher's observation during his CRA role).
Physical Artefacts	Patients' electronic Case Report Forms (e-CRFs).

3.5.1 Semi-Structured Interviews

The first and most important method employed for this research is the semi-structured interview. Despite the classic positivist objections against qualitative interviews, which are based on the perception that the interview is not objective,

scientific, trustworthy, reliable, valid or generalisable (Kvale, 1996), interview data has a long history of contributing to social science (Kvale and Brinkmann, 2009; Guthrie, 2010). Indeed, it is the most widely employed method in qualitative research (Bryman, 2012). To give an example, Conversation Analysis (CA), which can be perceived as an unstructured interview, has been used for obtaining systematic knowledge since the 5th century B.C. when Thucydides interviewed participants from the Peloponnesian War to write its history, or when Socrates created philosophical knowledge through dialogues with his Sophist antagonists (Kvale and Brinkmann, 2009). The term 'interview', has been used since the 17th century and extensively in 20th-century social sciences, whilst today it is heavily used in fields such as education, psychology, anthropology, sociology, media studies, human geography, marketing, business and nursing science (Kvale and Brinkmann, 2009). Despite the fact that the long history of the interview cannot be the sole argument for its scientific effectiveness, its enduring use can be perceived as a strong indicator of its value. Bryman (2012) suggests that an important factor in the value of the interview and in its common use is its flexibility and this can be perceived as an important reason for the researcher to build his research around this method instrument.

According to Bryman (2012), qualitative interviews can be unstructured or semi-structured, whilst the structured interview is perceived as a quantitative tool. Table 7 includes the main characteristics of these three types of interviews (Guthrie, 2010). The flexibility of the semi-structured interview, the comparability that closed-response questions offer and the ability to add a more in-depth analysis through explanatory open-ended questions were the main reasons for

the researcher to rely on this type of methodology. According to Gillham (2000), the semi-structured interview is the most important type of interviewing in case-study research, whilst its flexibility transforms it into a productive research tool.

Table 7: A Comparison of Types of Interviews

Unstructured Interview	Semi-structured Interview	Structured Interview
<ul style="list-style-type: none"> -has a conversational form; -goes in-depth into a topic; -is appropriate for obtaining sensitive information; -is appropriate for one-off situations or for obtaining factual information; -interviewer speaks minimally, is an almost passive observer and uses open-ended questions. 	<ul style="list-style-type: none"> -is a guide so information from different interviews can be comparable; -has standard introduction and conclusion but allows for flexibility regarding the order of questions; -usually contains closed-response questions that can be followed-up by explanatory open-ended questions; -can be a combination of gathering qualitative and quantitative data. 	<ul style="list-style-type: none"> -is a quantitative method of generating data; -is a formal standardised questionnaire; -increases reliability and comparability; -can offer greater coverage but not depth.

Source: Guthrie (2010)

Different sets of questions were used to interview different types of work roles. The reason behind this decision was that the different roles would enlighten a different prism of this under-examined phenomenon. For example, the IT expert would emphasise the technical aspects of WFH, the managers would highlight the managerial or performance part, whilst the CRAs would have a unique description of the WLB part of this research. The researcher prepared a guideline (Appendix 5) for interviews of Garden’s CRAs, managers, IT executive, Clinical Trial Assistants (CTAs) and trainers, whilst at the end of every interview he asked participants to complete a one-page questionnaire regarding their demographic data. The list of questions worked as a guideline

for starting an interview and was not exhaustive as new questions – mostly explanatory – arose through the process of conversation. Besides the questions asked in the interviews, Appendix 5 also includes another important element; next to every question there is the source of the literature which examined this under-examined topic in the past. Although the literature presented in Appendix 5 is not the only literature used to support this thesis, it worked for the researcher as the starting-point to shape the topics and research sub-questions which were investigated.

During the interviews, an audio recorder was used to record the interview as English is not the researcher's mother language and there was a possibility of missing something important. The researcher avoided taking notes so that he could concentrate 100 per cent on the process of the interview, increase eye contact and non-verbal communication and avoid giving feedback to the interviewee about the relative importance of topics mentioned during the conversation (Blaxter et al., 2006). No technical or other problems were experienced during the recording of interviews. The interviews were transcribed and then analysed thematically (see Section 3.6 for more information about thematic analysis) as they were the main tool of this research and all of the next section's instruments operated around them in a supportive way to sustain or degrade the interviewee's statements.

3.5.2 Observation and Secondary Data

Observation of both types – direct observation as an office-based RTA and participant observation as a home-based CRA – were used mainly for triangulating data gathered from the interviewees. Generally, Denzin and Lincoln (2011: 5) define triangulation as '*the display of multiple, refracted realities simultaneously*', whilst Bryman (2012: 392) defines it as the use of '*more than one method or source of data in the study of social phenomena*'. Among all the various types, this research uses the type of triangulation that uses different sorts of data (Flick, 2009). To start with, the researcher used his observation to test interviewees' statements. However, the observation's contribution to primary knowledge was minimal as the critical factor of this research, the CRAs, were working from home or hospitals, making direct observation impossible. The researcher had the opportunity to meet CRAs when they visited the office for meetings with supervisors, and for annual and quarterly CRAs and/or Quality Team meetings, whilst he also worked with them, particularly on monitoring visits, more often after being appointed to his new home-based CRA role.

The secondary data used for this research had a more significant role than the observation did. To give some examples, the researcher's personal emails, metrics and Microsoft Outlook calendar were used for triangulating findings regarding CRA aspects such as supervision and management, communication with researchers and other colleagues and the number of visits to the premises and to hospitals etc. In particular, Garden's archives were used for comparing CRAs' statements about absenteeism with official records; CRAs' documents

and researcher's employment contracts were used for understanding the training and employment status of homeworkers; Olympus's website was used for interpreting the academic institution's reflection on, and support for, the WFH phenomenon, which in fact was implemented in only one small part of it – the Garden.

3.6 Data Analysis: Grounded Theory and Thematic Approach

Some critical realists' (Smith and Elger, 2014; Pawson, 1996) approaches support the idea that the interview should be active and that the researcher should be the driver of the discussion in their effort to support a theory. Indeed, Smith and Elger (2014) state that, from a critical-realist approach, the interview is not a 'dry' recording process (positivist approach) and the interviewer has a more active role. They explain:

'... interviews involve interviewer and respondent engaging in a fluid interactive process to generate a set of responses which formulate perspectives, observations, experiences, and evaluations pertinent to an overall research agenda'. (Smith and Elger, 2014: 119).

Despite the fact that this research claims that it belongs to critical realism, the researcher attempted to adopt a slightly different and more neutral approach concerning the process of conducting interviews. Despite the use of open and very often explanatory secondary questions, the researcher was first a passive listener and recorder and then the driver of the discussion. The reason behind this approach was that the researcher was not an external, unknown person but a colleague who wanted to gain the trust of his future collaborators by

demonstrating neutrality. This neutral approach should not be perceived as a drawback of this research; not leading the interviewees – no matter what the reasons – was another way to strengthen the research’s objectivity (more about the role of the researcher in relation to validity will be presented later in Section 3.9). On the other hand, the use of secondary data and the personal diary supported the critical part of the interviews’ ‘positivist reality’. As explained in Section 3.3, it is not only its methodology but the overall topic and the effort to challenge the mainstream necessity of the centralisation of work staff that permits the labelling of this research as a critical-realist one. As Ackroyd and Karlsson (2014) suggest, one of a critical researcher’s aims is to identify the causality of mechanisms at work and this was an important objective of this research.

Therefore, the data analysis was performed according to grounded-theory principles as this research aims to generate or discover a theory (Creswell, 2013; Yin, 2014) which is the generalisation and expansion of WFH as a mode of work. Very often, a large part of the literature which focuses on the phenomenon of telework is very descriptive, whilst a significant theoretical framework is missing (Bailey and Kurland, 2002) and this is another challenge for a social researcher and a reason to use grounded theory. According to Bryman (2012), grounded theory is the most common framework for analysing qualitative data in social sciences, whilst the methodology of this research is often based on Glaser and Strauss’s (1967) ideas. Glaser and Strauss (1967) can be perceived as the patriarchs of grounded theory. Their main difference from other, earlier authors who focused on methodological issues was that they

emphasised a research methodology which targets the development of a new theory, whilst previous authors were attempting to verify existing theories (ibid).

Grounded theory was created to explain '*what is going on*' in a particular field (Gibson and Hartman, 2014: 2) and the field that this research explains is that of clinical trials. According to this approach, theory is generated from data and the whole procedure may be recursive as:

'... data collection and analysis proceed in tandem, repeatedly referring back to each other'. (Bryman, 2012: 387).

Indeed, the recursive process started when the first data, which originated from the CRAs' interviews, were generated. Then, they were compared and/or triangulated with those of the managers' interviews and finally all of them were compared with – and enlightened, interpreted, or rejected by – the additional secondary data. In a similar way, Yin (2014:136-137) describes the approach of handling the data:

'Whether as a result of your earlier "playing with data" or noticing a pattern for the first time, you may now find that some part of your data suggests a useful concept or two. Such an insight can become the start of an analytical path, leading you farther into your data and possibly suggesting additional relationships'.

Yin (2014) describes grounded theory as an inductive strategy, whilst Hart (1998: 82) claims that, in induction:

'... statements are made about a phenomenon [WFH in this case] based on observations of instances of that phenomenon. It consists of arguing that because all instances of a [alpha] so far observed have the property b [beta], all further observations of a [alpha] will also have the property b [beta]'.

Therefore, the inductive logic of this strategy can be perceived as an important tool for the overall effort to produce generalisable concepts which can apply to other organisations and/or entities. Grounded theory's tradition was linked to

the mid-20th-century positivist approach with the emphasis on logic and pragmatism, but this research followed a different approach based on many more recent scholars who have managed to add many constructivist elements on the overall methodology (Charmaz, 2005). Even Glaser and Strauss (1967), who made a significant contribution to grounded theory, invite the readers to interpret the theory's strategies in their own way (Charmaz, 2005). As a result of this flexibility, a more constructivist approach, such as this research's critical realism, is adopted, focusing on the studied phenomenon rather than the methods of studying it (ibid). In particular, Gibson and Hartman (2014: 17) explain:

'... that to start digging in the philosophical assumptions behind grounded theory is a waste of time and effort.'

From a historical point of view, Gibson and Hartman (2014) claim that this heretical approach towards science, said to have been started by Glaser and Strauss (1967), actually originated from earlier works by Popper (2002) (originally published in English in 1959) and Kuhn (2012) (originally published in 1962). According to Popper (2002), who openly questions the positivist single way of doing things, scientists need to start their research with guesses and then try to test them. In addition to this approach, according to Kuhn's (2012) school of thought, the researcher should not pay much attention to the philosophical framework (Gibson and Hartman, 2014). In particular, despite the fact that Kuhn (2012) accepts that there is always a philosophical background, he perceives that there is no benefit in the researcher focusing on it (Gibson and Hartman, 2014). Generally, the overall criticism of the established theory of a field is not a recent issue. Almost half-a-century ago, Denzin (1970) highlighted the problems of theory construction. He explains:

'Nearly every observer of modern sociology has developed his own criticism concerning the present status of theory in the discipline.'
(Denzin, 1970: 59)

Bryman (2012) goes further by stating that grounded-theory literature is based on two separate paths: the first path supports the contention that grounded theory is a distinct theory, whilst the second path perceives this as a technique to create other theories. This research supports the second approach as, in line with Yin's (2014) approach, the idea is to use a methodology that will create a theory [or a new paradigm as Kuhn (2012) defines paradigm] and not to follow specific ideological principles as rules may change through unexpected findings at any time during the whole process. Indeed, the discovery and use of a large part of the secondary data was the result of the researcher's unexpected change of role; through his new CRA role, the level of access to the institution's databases increased, resulting in a better understanding of CRAs' characteristics of work.

The data – with emphasis on the semi-structured interviews – were analysed and grouped according to themes (thematic analysis). A unique academic definition does not exist for thematic analysis. Gomm (2004) describes thematic analysis as a type of content analysis. Bryman (2012) claims that many writers perceive thematic analysis – a common methodology of qualitative research, which is very often linked to grounded theory – as an analysis of codes, where a theme is something similar to a code. The themes of the current research are sufficiently clear and structured. The five topics presented in the introductory chapter shape five large themes, whilst almost every question or band of questions in the interview guideline supports a smaller theme relative to one of the big five. Very often in this research, data were analysed and presented

without using merely the traditional quantifiable approaches. Strauss and Corbin (1998) suggest that qualitative data analysis is not an analysis of interviews and observations which is based on statistics. Indeed Strauss and Corbin (1998) states that:

'In speaking about qualitative analysis, we are referring not to the quantifying of qualitative data but rather to a nonmathematical process of interpretation, carried out for the purpose of discovering concepts and relationships in raw data and then organising these into a theoretical explanatory scheme'. (Strauss and Corbin, 1998: 11)

With this in mind, the next section presents the procedures and the rationale behind the selected sample.

3.7 Sampling

As explained earlier, this research's most productive source of data is the semi-structured interviews conducted with staff who were working or had worked for Garden. The sample used was one of 29 employees – the Director, the Quality Manager, four Senior CRAs (line managers of CRAs), a Trials System Executive (line manager of the RTA – the researcher) who represented the management perspective as discussed earlier in the thesis, one Clinical Trial Assistant (CTA) who had an administrative role and 21 CRAs who were working or had worked from home for the organisation. In particular, out of the 21 CRAs interviewed, three were no longer working for the organisation, whilst one of these three was still working, but in a totally different role and not for Garden. Out of the four Senior CRAs, one had left the organisation to work for another big public employer (again in a managerial role). The researcher managed to interview 18 out of 19 CRAs who were working for the Garden at the time of the

data collection; in addition, four ex-colleagues were contacted through email to participate in the research, but did not respond.

The initial plan included the interviewing of trainers (Appendix 5, Questions 5.0) but as it was discovered that they did not participate in any way in the home-based CRAs' experience, the plan was withdrawn; among other duties, trainers were used for introducing new CRAs to their job role and keeping them on an updated level of knowledge of Good Clinical Practice but without focusing on the social aspects (home-based in this case) of their job.

The sampling, as part of the qualitative research, can be perceived as purposive sampling. According to Bryman (2012), this sampling technique is deemed 'purposive' – and non-probability – because members of staff have been chosen for a purpose, that of covering the needs of the research questions. Furthermore, sampling can be characterised as convenience sampling as the researcher was working at the same organisation with the majority of those sampled (obtaining easy access); the few who were not working anymore for the Garden and had left for another employer were contacted through current colleagues (mostly Senior CRAs) using snowball sampling (ibid).

All members of the sample were first contacted orally or through email and were informed about the existence of this research and asked for their help in participating in the study. When a first consent was given (usually orally), the researcher sent by email the participant information sheet (Appendix 6) to offer more structured information about the nature of the research. The researcher then requested an appointment with the participant for an interview, which was

usually at least three days after the participant information sheet's delivery, in order to provide time for the participant to decide about his/her participation. The participant information sheet included, among other information, the fact that anonymity and confidentiality could be considered as granted and that pseudonyms would be used when there was a need to mention a participant in the research. In all cases, the participant signed an informed-consent form (Appendix 7) before the start of the interview. Both the participant information sheet and the informed-consent form followed Bryman's (2012: 141) guideline. When an interview was not conducted face-to-face but through telephone or Skype, the informed-consent form was sent to the participant by email or post. In all cases, the participant returned the signed and dated form before the interview (again through email or post). The researcher did not face any issues when it came to the participants' understanding of the whole process. CRAs, in general, are familiar with the idea of giving consent for a study as one of their fundamental duties is the source-data verification of patients' participant information sheets and informed consents.

The majority of interviews were conducted on a face-to-face basis, whilst Skype and phone were alternative options. The recorder used in face-to-face interviews was also used for both telephone and Skype interviews. A total of 15 interviews were conducted in a meeting room inside the organisation, four in an organisation's cafeteria, two in participants' personal office space (Director and Quality Manager), six over the telephone when participants were at home (in five of these cases, the researcher was also at his home, whilst on the sixth occasion he called from a landline at Garden) and two on Skype (in one interview Skype was used without a camera in a similar way to a phone

landline) where both researcher and participant were at their homes. All interviews were conducted during the first six months of 2014.

The next section focuses on the overall quality of the research design. Using Yin's (2014) and Bryman's (2012) ideas, there is a presentation of some of the traditionally important concerns of every social scientist who claims to conduct scientifically valid and reliable research and of their link with the methodological approaches of the current research.

3.8 Quality of Research Design

Yin (2014) evaluates the quality of any empirical social research – including case studies – using four categories of tests. In particular, he evaluates the research according to its three types of validity and its reliability. The next section starts by defining the validity.

3.8.1 Validity

Yin (2014) suggests tactics which can increase the overall validity of case-study research and these are presented on the three bands of Table 8. The third column has been added by the researcher and includes his applied methods which have been used to improve the overall quality of the research.

Table 8: Validity and Tactics

Tests	Case-Study Tactic	Applied method
Construct Validity	<ul style="list-style-type: none"> • Use multiple sources of evidence. • Establish chain of evidence. • Have key informants review draft case-study report. 	<ul style="list-style-type: none"> • Documentation and archival records are used to strengthen findings from interviews. • The chain of evidence starts from the conduct of the interviews which are followed by the aforementioned secondary data analysis. • Key informants, such as managers of CRAs, are interviewed to add their perspective of the WFH reality.
Internal Validity	<ul style="list-style-type: none"> • Do pattern matching. • Do explanation building. • Address rival explanations. • Use logic models. 	<ul style="list-style-type: none"> • Findings from CRAs are matched to findings from their managers. • In a critical-realism approach, explanation is searched for interpreting the findings. • Questions related to critical literature are asked to challenge the 'objective' drawbacks of WFH mode. • A mainly inductive logic is used.
External Validity	<ul style="list-style-type: none"> • Use theory in single-case studies. 	<ul style="list-style-type: none"> • A main theory, which can be presented as fundamental to this research, is missing; the overall data analysis is based on grounded theory which is aimed at the creation of theories, concepts, generalisations etc. (Yin, 2014).

Source: Yin, 2014: 45

Bryman (2012: 47) characterises validity as the most important criterion of research and states that it:

'... is concerned with the integrity of the conclusions that are generated from a piece of research.'

However, Bryman (2012), in a different approach to Yin's (2014), distinguishes four types of validity: measurement, internal, external and ecological validity and this approach was also important when creating the data generation and analysis in this research. Measurement validity is an issue with mainly quantitative research and is concerned with the question of whether a measure reflects the concept that is being explored (Bryman, 2012). For example, is it sufficient to use a question such as 'How much per month do you save from travelling as a result of WFH?' to measure the monthly savings of a home-based CRA, or are additional questions required to gain a clearer picture of the concept?

Indeed, on top of the additional questions asked of the interviewees, other sources were used to strengthen the validity of the research's outcome.

Internal validity is related to the issue of causality and whether 'α' causes a change to 'β' and how you can be sure that the change in 'β' is not produced by another factor, whilst external validity examines whether results of the study can be generalised to other groups (Bryman, 2012). To give an example, can it be claimed that a good WLB is caused solely by a CRA's home-based working experience, or is it other factors which cause the employees' balanced life? This existence or not of causality is another important factor, which was examined in the research when data were generated and various, sometimes opposite, opinions needed to be synthesised to produce the data analysis.

External validity is related to the generalisability of data (Bryman, 2012). Indeed, this thesis claims that the outcome of this research can be generalised to other CRAs and clinical-trial organisations. However, as producing generalisable

results is an important target for any research, more details will be given later in Section 3.10.

Ecological validity focuses on the idea that findings should be applicable to people's everyday lives and that research tools should not operate in a research environment that is unrealistic or isolated from real conditions of life (Bryman, 2012; Robson, 2011).

Despite the fact that the majority of all the aforementioned issues apply mainly to quantitative research, the external validity can apply also to qualitative research (Bryman, 2012) and, in this case study, interviews can be generalised to other employees and organisations. As explained in the Literature Review chapter, as CRA is a much regulated profession, it can be claimed that findings coming from researching this group also apply to other CRAs from other organisations in the UK or Europe, as well as, using a broader prism, other organisations and employees. The next section covers another important factor in the overall value of this research, its reliability.

3.8.2 Reliability

Reliability is a criterion for the evaluation of social research, but mainly of quantitative research, and is concerned with the question of whether results are repeatable and measures are consistent (Bryman, 2012). As a case study is:

'... a spatially delimited phenomenon (a unit) observed at a single point in time or over some period of time...' (Gerring, 2008: 19),

and this single point of time will never come again, the same results are not an objective for qualitative research. As Yin (2014: 48-9) suggests:

'... the emphasis is on doing the same case over again, not on "replicating" the results of one case by doing another case study.'

For example, single CRAs who have no children, and who expressed a neutral or negative opinion towards WFH during the interview, may express a different opinion after entering a different phase of their life. Therefore, a repetitive case-study methodology (assuming that the participant will be asked the same questions) will not result in 'replicating' the results.

Finally, measures can be perceived as consistent as every piece of information is systematically documented and/or transcribed through all stages of the process. As Silverman (2013) suggests, the author of a dissertation should demonstrate to the reader the transparency of the procedures in an effort to show that the methods used are reliable and that the conclusions are valid and, indeed, this aim has been in the researcher's mind in every step of this project. Indeed, the overall role of the researcher, as part of the examined entity, is analysed in the next section.

3.9 The Role and Presence of the Researcher and Validity

Another concern about the validity of these results may originate from the fact that the researcher was a member of staff of the examined organisation. The researcher aimed to have a presence that was as 'invisible' as possible during the data-generation process; he had to eliminate any fears or reluctance that an

interviewee may express during an interview and which may influence the overall validity of the data. The researcher explained verbally and in written confirmation that the research was for personal academic research and did not conflict with the aims and duties of Garden. This reassurance was also in accordance with the reassurance of confidentiality and anonymity required by the University Ethics Committee. Despite the fact that the researcher was employed for more than 1.5 years in the organisation, his personal relations as a co-worker with the sample were minimal, if any, during the time of the interviews. His isolated role at the office (spending most of his time working only with the Systems Trials Executive) did not permit him to develop personal relations with the majority of the respondents. For most of the CRAs, the introduction of the research by the researcher came with the first one-to-one contact. It is obvious that claiming that the outcome of the research might be influenced by a purely friendly (thus non-objective) relation with co-workers cannot support a solid argument. Undeniably, it was the nature of the job (as will be discussed in the Data Analysis chapter, many CRAs mentioned isolation as a major problem with the nature of their job) that was not promoting interpersonal relations with co-workers.

From a theoretical perspective, previous published research relied on observation of a manager's working day, whilst the researcher was the internal observer for a week, observing and collecting data (Mintzberg, 1973). In addition to this earlier research, Mintzberg (2011) conducted a more recent study in which he participated again as an internal observer who observed 29 managers. Indeed, in his '*Choosing the Managers to Study*' section (Mintzberg, 2011: 238), he claims that personal relationships were not an obstacle to the

objectivity of his research, whilst in the section '*Did my presence influence what I saw?*' (Mintzberg, 2011: 240), he claims that his presence sometimes made a difference but not in any significant way and did not interfere with his research's basic purpose (Mintzberg, 2011). In a similar way, the author of the current thesis made clear efforts to ensure that his presence in Garden did not operate as a barrier to collecting valid data. At this point, it would be important to remind the reader that, from the 29 employees in this sample, 28 (96.5 per cent) were doing jobs of grade six or higher which were more senior in comparison to that of the researcher who was in grade five when he was conducting the interviews. If Mintzberg (2011) can claim that his presence, when observing 29 different managers for a whole day, did not influence his research outcomes significantly, then this researcher, who was a subordinate in an office with more senior colleagues, can claim the same. It is important to highlight that these colleagues were requested to participate in a single in-depth interview and were reassured that anonymity and confidentiality would be maintained. As Mintzberg (2011: 239) claims, the researcher was there for '*insight, not proof*' and this '*insight*' into the CRAs' working reality can be perceived as a target which was achieved. On the other hand, Mintzberg (2011) is an external who becomes a one-off internal (but as an independent researcher and not as a work colleague) for the sake of his research, whilst this researcher was a permanent member of staff, whose presence had duration and thus may have had an overall influence. This concern was covered by the structure of the questions. The researcher shaped the questionnaire with questions that could be characterised as neutral. The overall target was to avoid the creation of any type of discomfort among the sample. Indeed, the researcher did not feel, at any part of the interview process,

that he caused stress to the participants, or made them feel uncomfortable in any way.

Hilbrecht et al. (2013), in their description of the sample they used in their research and the way they approached it, state that the sample was contacted by the HR department without its being perceived as a problem that the initial contact was made by its employer (HR department). This is the actual description of the teleworkers that authors of this paper give:

'Participants were initially contacted with the help of the Human Resources department of the company for which they worked. The department sent an email message to teleworkers explaining the research project, inviting them to complete a short Internet survey and to indicate whether they would be willing to participate in a subsequent interview. Of the 75 teleworkers who completed the survey 51 (43 women and eight men) agreed to be interviewed. All data were kept confidential, and participants were given pseudonyms.' (Hilbrecht et al., 2013: 133)

In this text, Hilbrecht et al. (2013) make it clear that they gained access to a sample through their employer. Would the researchers have had access to them without the HR's email? Probably not. Is this a problem? Do teleworkers perceive that there is association between the research and the company that they work for and therefore they must think twice before they answer? Is there a personal relationship between the researchers and the employer? How was the contact between the two established? It seems that these questions do not create any concerns to Hilbrecht et al. (2013) and the statement about confidentiality and pseudonyms is enough to cover all aforementioned worries.

To give another example, Golden (2006), in his research about teleworkers of a professional level, admits that the research was based on the help of a senior manager. He explains the role of the manager:

'A senior manager solicited participation as part of a larger corporate study on work practices, and encouraged responses so that "an accurate understanding of our organization and employees" could be gained. Respondents were assured anonymity and informed participation in the web survey was voluntary.' (Golden, 2006: 180-181).

As with Hilbrecht's et al. (2013) and Golden's (2006) researches, the researcher of the current research perceives confidentiality and anonymity (pseudonyms) as two significant pillars of the process of obtaining validity.

Another pillar of validity is the structure of the sample. As explained in Section 2.5, the examined sample contains staff who no longer work for the Garden. Three CRAs and one line manager (Senior CRA) were contacted and interviewed to increase the number of people who participate in the research but also to increase the objectivity of data from the externals' point of view. Indeed, findings from the externals were in alignment with those of the current staff.

From another, more theoretical angle, the researcher found the general UK business environment a good framework in which to conduct qualitative research. In fact, according to earlier classic work on cultural differences (Hofstede, 1994; Hofstede et al., 2010), many mainstream management textbooks' authors describe UK managerial culture as one which is individualistic and masculine (i.e. materialistic), based on low power distance and willing to cope with uncertainty (Wilkinson and Redman, 2013; Foot and Hook, 2011; Torrington et al., 2011; Boddy, 2014). Having these generalisations in mind, the researcher used this advantage of working in an environment of low power distance and asked his managers for an interview in a friendly way. The researcher benefited from the general cultural willingness to face uncertainty and thus broke CRAs' routine by asking them for an interview during their

working time. Generally, this national and cultural framework, as described by Hofstede et al. (2010), permits employees to talk about themselves and their organisation without feeling that they have to have special permission and this freedom of speech can be considered one of the main springboards of this research. In other words, employees contributed to this research by openly discussing themselves and their employer because, culturally and legally, they were allowed to do it.

The next section is one of the most important sections of the Research Methodology chapter. The emphasis is on presenting the benefits and the transferability of the research.

3.10 Benefits and Transferability of this Research

An important aim of this research, as with every research, is to generate data and results which can be used to benefit other groups of people. Therefore, the overall generalisability of the outcomes of this research must be considered desirable. On the other hand, classical critique of qualitative research, and in particular case-study methodology, focuses on the fact that people who are interviewed are not a representative sample of the population (Bryman, 2012). For example, in her research about professional teleworkers, Tietze (2002) suggests that she is not going to claim that her study can be generalised to other telework groups. In particular, Tietze (2002) identified few barriers against the production of generalisable results; she mentions that those who work at home do not belong to a homogeneous group, that agreed definitions or census

data are missing and that non-privileged employees experience a different home-based reality to that of the professionals [see Felstead and Jewson (2000)]. Therefore there are concerns about the appropriateness of a single case study, such as this research, in providing answers that can be generalised. Furthermore, Flyvbjerg (2011), based on these concerns about the overall credibility of this methodology, summarises five common misunderstandings concerning the case-study approach, as shown in Table 9.

Table 9: Misunderstandings about case study

<i>Misunderstanding No. 1</i>	<i>General, theoretical knowledge is more valuable than concrete case knowledge.</i>
<i>Misunderstanding No. 2</i>	<i>One cannot generalise on the basis of an individual case; therefore, the case study cannot contribute to scientific development.</i>
<i>Misunderstanding No. 3</i>	<i>The case study is most useful for generating hypotheses in the first stage of a total research process, while other methods are more suitable for hypothesis testing and theory building.</i>
<i>Misunderstanding No. 4</i>	<i>The case study contains a bias towards verification, a tendency to confirm the researcher's preconceived notions.</i>
<i>Misunderstanding No. 5</i>	<i>It is often difficult to summarise and develop general propositions and theories on the basis of specific case studies.</i>

Source: Flyvbjerg, 2011: 302

Indeed, trying to argue against the first misunderstanding, Flyvbjerg (2011) argues that much of the knowledge of the empirical world is originated through case studies. For example, Yin (2014) considers Allison's (1971) explanatory single case study about the Cuban missile crisis in 1962 as a milestone in political science. Despite the fact that this research was focused on one rare case, it became a classic in this field of social sciences (Yin, 2014). Indeed, Allison (1971) himself declares, from the very starting point of his book, that his research may be perceived as generalisable. He states:

'... I explore the influence of unrecognised assumptions upon our thinking about events like the missile crisis.' (Allison, 1971: v)

It is obvious that, in an inductive approach, he attempts to use *'the influence of unrecognised assumptions'* and *'events like the missile crisis'* (evidence from observation and experience) to create knowledge about *'our thinking'* (generalisable truth). To give another example of an influential academic work, which uses a case study to support generalisable results, Marx uses in *Das Kapital* many details of a case which was based on Manchester Mill, an Engels family business (Brown and Roberts, 2014).

Yin's ideas (2014) can be used again to abolish the second misunderstanding about the scientific value of a single case. To clarify, he describes that the case study can offer an important contribution in *'extreme'* or *'unusual'* cases. Yin (2014: 52) explains:

'... in clinical psychology, where a specific injury or disorder may offer a distinct opportunity worth documenting and analysing. In clinical research, a common research strategy calls for studying these unusual cases because the findings may reveal insights about normal processes'.

Similarly, Carr et al. (2012b), in their description of the different types of clinical research, recognise that qualitative research, in general, is very often used to research human behaviour where there are few or no hypotheses to be tested and the topic of the study is poorly understood.

There is a long tradition of health professionals using research methodology of social sciences to understand human health (Green and Thorogood, 2004). Millard (1998) argues that the methodology of a single-case study can offer valuable help in conducting research in a clinical environment and focuses on the fields of speech and language therapy. Flyvbjerg (2011: 304) supports the scientific value of the single experiment, another form of single-case study, by

explaining that, historically, the lack of numbers and observations 'across a wide range' was not an obstacle for Galileo in rejecting Aristotle's law of gravity and ending 2,000 years of scientific dominance. To give another example of how single cases/papers can contribute to the overall evaluation of a phenomenon, it is difficult for a single paper to prove that global warming is a result of man's activity, but when more than 97 per cent of 11,944 abstracts of 20 years of publications (1991-2011) agree with this statement (Cook et al., 2013), then it is easier to claim that there is a scientific contribution and generalisable results in each single paper.

The third misunderstanding/stereotype of Table 9 is built on the false assumption that a case study can be used only for the first part of any research in order to create a hypothesis which will be tested later on by another methodology. Flyvbjerg (2011) supports the idea that the careful selection of a single case study and sampling can lead to the overall production of generalisable results. In addition to his arguments against the second misunderstanding, Flyvbjerg (2011) presents the example of a single case which can be used for producing generalisations:

'An occupational medicine clinic wanted to investigate whether people working with organic solvents suffered brain damage. Instead of choosing a representative sample among all those enterprises in the clinic's area that used organic solvents, the clinic strategically located a single workplace where all safety regulations on cleanliness, air quality, and the like, had been fulfilled. This model enterprise became a critical case: if brain damage related to organic solvents could be found at this particular facility, then it was likely that the same problem would exist at other enterprises that were less careful with safety regulations for organic solvents'. (Flyvbjerg, 2011: 307)

Similarly, the researcher of the current thesis aims to use findings of the model-organisation that he investigates in order to generalise and create a theory.

There is no need to search for many organisations (multi-cases); if a significant public organisation with high standards of management and research can do it (in our case, use WFH), then many others can follow.

The fourth misunderstanding about the existence of researcher's bias, which may lead to outcomes in line with the researcher's preconceived notions, is a common threat to the validity of social-science research and is not only linked to case-study methodology. In particular, Flyvbjerg (2011: 309) refers to Francis Bacon (1853) and his classic '*Novum Organum*' to point out that, in Bacon's age, the bias towards verification was a '*fundamental human characteristic*' and not only a problem for the case study's credibility. On the other hand, Mintzberg (2011: 239) claims that he was there, present in the research field, '*for insight, not proof*'. Finally, Flyvbjerg (2011: 309) suggests that there are many well-known case studies where the researchers' final reports contradict their initial '*preconceived views, assumptions, concepts, and hypotheses*'.

The fifth misunderstanding of the case study is that it is difficult to develop general theories and propositions. Flyvbjerg (2011) explains that case studies include an important element of narrative and that narrative is important for the creation of discourse theories. Flyvbjerg (2011: 311) points out narrative's historical value:

'... narrative seems to exist in all human societies, modern and ancient, and it is perhaps our most fundamental form for making sense of experience'.

On the other hand, Glaser and Strauss (1967), in a totally different approach, go further and raise doubts about the necessity to have 100% accurate evidence when trying to discover a new theory. Glaser and Strauss (1967: 23) explain:

'In discovering theory, one generates conceptual categories or their properties from evidence; then the evidence from which the category emerged is used to illustrate the concept. The evidence may not necessarily be accurate beyond a doubt (nor is it even in studies concerned only with accuracy), but the concept is undoubtedly a relevant theoretical abstraction about what is going on in the area studied. Furthermore, the concept itself will not change, while even the most accurate facts change.'

Small (2009) understands that there is a general issue when it comes to the generalisability of interview-based research and suggests that, no matter how big the sample is, it will never be a random sample. In particular, in cases of snowball sampling, the participants belong to the same 'network' and therefore the researcher cannot support the use of a random sample. Despite this matter of representativeness, in a simplistic but realistic way, Small (2009) suggests that it is better for a researcher to do the research (although he/she will never obtain full representativeness) than not to do it at all. Small (2009) compares case-study researchers (i.e. ethnographers in his work) with vessel builders to show the difference between 'representative' (if this has been achieved) quantitative research and qualitative case studies. In particular, Small (2009: 28) uses the following metaphor to explain that:

'In this context, I have argued that no matter what they do within the parameters of their original projects, Jane and Bill⁵ will never build airplanes with the capacity to fly. The "representative" single neighbourhood does not exist. Jane and Bill should not be building airplanes; they should be building, say, boats, vessels that are equally important for transportation and, during some circumstances, much more effective. And rather than build boats that try to fly, they should build boats that sail effectively.'

In conclusion, different authors express different schools of thought about the need to produce generalisable outcomes. Gerring (2008) suggests that case

⁵ Jane and Bill are two students who conduct a qualitative case study and worry about the generalisability of their project. Jane researches attitudes towards immigration of working class Afro-Americans and Bill investigates how neighbourhood poverty affects out-of-wedlock births.

representativeness is an issue that will never be finally settled. From Creswell (2009: 194), who gives advice to qualitative writers to quantify results and *'present text information in tabular form (e.g., matrices, comparison tables of different codes)'*, to Small (2009), who suggests that, to avoid seeking generalisability – or trying to 'build aeroplanes' – the necessity to generalise is perceived by researchers in a different degree.

The author of this thesis recognises the value of producing a generalisable outcome but does not consider it the ultimate objective of this study. The overall contribution to science can start from the tiny unit which is under the magnified glass without claiming that this unit represents a significantly larger entity. As Small (2009) describes, it may be better to substitute the statistics-oriented phrase 'sample of' with the phrase 'set of' to describe the total participants of the research and, at the same time, avoid false assumptions about the degree of generalisability.

Indeed, the researcher divides the generalisability of this research into two types: micro and macro. In micro-generalisability, emphasis is given to a similar group of professionals who can benefit from the outcomes of this research. In particular, even though WFH as a model of work is popular among CRAs, there are still companies, private and public, which are involved in clinical trials and are reluctant to use flexibility of space. However, besides the obvious group of CRAs and the broad clinical-trials sector, the study of this group of professionals can be beneficial for other professions. For example, professions with technical characteristics, such as lawyers, accountants, architects, business consultants, sales representatives, and generally groups where job performance is strongly related to job characteristics, deadlines and final

outcome and not to direct supervision and location, can benefit from this research as they may adopt telework policies. Indeed, Thompson and McHugh (2009: 209) suggest:

'... telework is much more feasible for professional workers who are subject to output rather than process controls'.

Furthermore, this study can be useful for knowledge workers, information workers, sales and marketing personnel and other groups of people who can work from home, as in cases where individual control of work pace and little need for face-to-face contact are characteristics of the job (Bailey and Kurland, 2002).

In macro-generalisability, emphasis is given to every single worker who can be described as a screen user, no matter what their level of skills and competences. Despite the 41 years of telework/telecommuting literature (since Nilles, 1975), evidence from the British Labour Force Survey (data from 500 employees collected from April to June 2012) suggests that home-based telework (WFH) is rare among employees in the UK (0.5% of the total sample) and is usually a male privilege (additional evidence that those who telework are mainly male, highly educated, usually living with partner and children, and with long commuting hours to their premises, also originates from the Netherlands) for those employees who work in senior positions (Kamerade et al., 2013). This 'elitism' and male dominance is a key focus that this research tries to challenge; if a manager can do it, why not also administrative staff? Theoretically, the traditional individualism, low power distance and willingness to cope with uncertainty which characterise the British working environment (Hofstede, 1994; Hofstede et al., 2010), together with the current austerity climate which dominates on the European continent (Kamerade et al., 2013), can be a good

starting-point for supporting the expansion of flexibility of space to more organisations and sectors in which physical presence is not required. Although, in many cases, the total absence from premises cannot be an option, WFH can be adopted and adapted on a part-time basis according to employees' and employers' needs. More arguments on the suitability of such a mode of work follow in the next two chapters. However, before moving on to the Data Analysis chapter, it is important to consider the research process and its ethics.

3.11 Ethical Considerations

This research aims to operate in a fully ethical and moral framework. In particular, even if both ethics and morals are concerned with what is good or bad, their difference is that ethics concerns general principles of what people ought to do, whilst morals relate to actions which are in alignment with people's notions of what is correct or wrong (Robson, 2011). The researcher, in his effort to explore the CRAs, did his best to respect both the legal and the personal framework in which these people, most of whom also happen to be his colleagues, live. He ensured that this research did not cause any difficulty or problem to participants in this study. As the participants' identities are mostly known by the researcher, only confidentiality and anonymity can be assured for the purposes of the research. In particular, the researcher can ensure that he has not uncovered and will not, in any future work, reveal the identity of the participants of this research or write anything that may harm them.

Finally, audio recorders, paper-transcripts and notes are kept in a secure and safe locker. During the research, transcripts were stored on the researcher's password-protected laptop. The researcher was the only individual who had access to it. After the end of the research, the transcripts were saved on a DVD and stored with other papers and audio recorders in the aforementioned locker. The overall ethics approval for this study was given by the Humanities, Social Sciences and Health Studies Research Ethics Panel at the University of Bradford on 19th December 2013. In addition, the researcher has also asked for, and received, ethics approval from Garden's management team and Olympus's ethics department.

The next section focuses on reflections on the research, mainly from a technical/methodological point of view.

3.12 Reflections

Rosalind [Franklin]: ... I think there must come a point in life when you realize you can't begin again. That you've made the decisions you've made and then you live with them or you spend your whole life in regret.

(Ziegler, 2015)

Although the overall research design and analysis of data can be perceived as satisfactory, without any problematic areas, there were some technical problems which could have been avoided. For example, initially, for more than half of the interviews, an Olympus digital voice recorder VN-7700 was used. When the time for transcribing arrived, the researcher realised that the recorder could not be linked to any other device; all data had to be transferred to paper

after pressing and releasing the start button uncountable times risked damaging the recorder and losing the saved work. Thankfully, nothing bad happened but the whole experience led the researcher to the decision to buy a new recorder for the second part of the interviews. A Philips DVT 7000 Digital Recorder, with a micro SD card and USB door, replaced the previous recorder and decreased the researcher's fears of losing data.

Another technical issue was the use of Skype (including use of camera) to interview a CRA who was at home. The voice of the interviewee had to pass from the laptop to the external recorder which was lying on the researcher's desk; as a result of poor connectivity, voice disruptions could, theoretically, have created problems during the final transcribing. Although very few phrases were lost, this was a method which was risky and therefore its use for interviews is not suggested. On the other hand, using Skype only as a landline (with no use of camera) to call another landline brought no significant problems. However, this approach of using Skype as a telephone makes the observation of physical behaviour (although not recorded in the current research) impossible.

Finally, regarding the setting used for the interviews, the researcher found that the most productive interviews were those conducted by telephone in which both interviewer and interviewee were at home. Although there is no evidence that the interviewer lost any significant information as a result of using the cafeteria and/or meeting rooms, the majority of phone interviews were lengthier than those held at work premises. However, again, maybe this had something to do with the experience of the researcher as the home interviews were conducted at the end of the research when the interviewer had shaped a solid

picture of possible answers and was seeking further explanation and information from CRAs. Therefore, it may be his experience that made the interviews longer. After all, the analysis of this research was based on the answers of the participants, on secondary data and on personal notes. It cannot be considered as linguistic research as feelings, body language, face expressions and games of voice or gestures were omitted from the final analysis.

The next section summarises the main topics presented in all previous sections of the Research Methodology chapter.

3.13 Conclusion

To sum up, this chapter has been aimed at justifying the overall research methodology applied in this research. Starting with the description of the examined organisation and the role of the researcher in it, the chapter has demonstrated the importance and the structure of the chosen organisation. The idea was to explain the rationale behind the decision to choose this organisation as the centre of a case study. The chapter then introduced the ontological and epistemological framework of the research. It was argued that realism, and especially critical realism, was the philosophical framework of the research, as many of the 'mainstream' norms of the workplace were challenged in this research through the implementation of the progressive WFH model of work. The chapter then continued by focusing on the overall research methodology,

where it was explained why a single-case study was adopted and what the main advantages were of choosing such a research design.

The next section emphasised the chosen research instruments where the main focus was on the use of semi-structured interviews and secondary data. It was highlighted that all secondary data were used mainly to triangulate the findings from the interviews. It was claimed that grounded theory and thematic analysis were chosen for the analysis of the data, although it was highlighted that an important number of scholars claim that there is no unique definition and therefore methodology under the label of both grounded theory and thematic analysis. The sample used was purposive, whilst as few of the respondents were introduced by other colleagues, this small part of the sample was labelled as snowball sampling. Then all aspects of the quality of the research were presented. Focusing on the classic concerns around the validity and reliability of qualitative research and some specific concerns around the researcher's presence in the examined organisation, it was argued that the researcher did whatever was possible to minimise factors that could create a negative influence on the overall quality of the final outcome. An important section of the chapter was the presentation of the scientific value of the presence of the researcher inside the organisation. Although the research focuses on a single-case study, there is evidence that, with transferable knowledge, it can contribute to organisations and people with similar characteristics to the examined sample of clinical professionals. Finally, the overall ethical framework and reflections on the whole process were presented. The next chapter contains the implementation of all aforementioned strategies as it focuses on data analysis.

CHAPTER 4

4.0 Data Analysis

4.1 Introduction to Data Analysis

The Data Analysis chapter is built around the idea that the five topics – research sub-questions of Table 1 – need to be fully analysed and presented. The aim is to produce an in-depth analysis of Garden and CRAs and thus to create generalisable outputs which can be used by other organisations/sectors. In particular, the data analysis is based on the questions used during the semi-structured interviews and presented in Appendix 5.

The analysis starts with a description of the examined organisation, Garden, and the demographics of the sample. It is important to discuss the organisational structure and the role of Garden as well as to outline the type of people who participate in this research as many of their personal characteristics can be used to interpret the final outcome. For example, the gender or the age group of CRAs can be linked to participants' answers about childcare, career prospects or their understanding of management and supervision. On the other hand, Garden's role, the early history and the culture of the four organisations, which joined forces to create a single clinical-trials office, may shed light on other aspects of the WFH phenomenon.

The first research sub-question (Are CRAs happy to work from home?) focuses on work-life balance (WLB). Before suggesting an expansion of the WFH mode to other organisations, there is a need to examine if people are happy to do it. The second sub-question [What economic benefits (if any) do CRAs and the employer have by implementing WFH policies?] of this research concerns the

cost reduction that this mode of work offers to both employees and organisations. In a difficult globalised working environment, where cost reduction is the new way of increasing profitability, employees of a successful organisation in London are asked to share their experiences. The third sub-question (Is there sufficient technology to support the virtual office?) that this research takes under consideration is the use of technology. The analysis focuses on whether there are any differences between working from home and working at the office concerning the use and needs of IT. With the overwhelming majority of the examined sample having no idea about how the hidden circuits of their laptops operate, the research focuses on their everyday experience of operating the machines. Thus, from a technical point of view, the focus is on highlighting the difficulties, if any, of working on a laptop isolated at home. The fourth topic/research sub-question (How is the performance of home-based CRAs? Evidence from both CRAs and managers) emphasises performance. Is there a difference in employee performance when working away from work premises, external to the boundaries of the workplace? Does WFH enhance employees' productivity or not? Is performance linked to place of work? Finally, the analysis of the fifth research sub-question (Is there a difference in management/supervision as a result of the lack of direct supervision?) concentrates on the managerial perspective. The focus is on exploring how different supervision and management are when visibility is not an option.

The first emphasis is on the analysis of the examined organisation, Garden, and the demographics of the sample which follows.

4.2 Garden and the Sample's Demographics

As explained earlier, Garden was created as a joint initiative among three NHS trusts and an academic institution. According to Garden's CRA manual, the aim was to formalise previous established relationships between the four parts and to improve the quality and delivery of clinical trials. The CRA manual (Version 1.4, dated 8th November 2013) highlights the responsibilities of the CRAs. The following includes a summary of the CRAs' duties which are mentioned in the CRA manual.

Table 10: Summary of CRAs' Duties (Garden's CRA manual)

<i>Managing and monitoring all allocated studies, writing monitoring plans, reviewing medical protocols and writing timely, accurate and complete visit reports.</i>
<i>Reviewing and validating data that have been collected and identifying and resolving deviations from protocols and procedures (Source Data Verification according to Monitoring Plan).</i>
<i>Assisting sites with all aspects of study set-up including, but not limited to, Integrated Research Application System (IRAS) completion, submission to an Ethics Committee, submission to R&D, contract preparation, submission to the regulatory authorities (Medicines and Healthcare products Regulatory Agency), Case Report Form (CRF) review.</i>
<i>Completing Clinical Trial Authorisation (CTA) applications and amendments for review and submission. Presenting protocols and procedures to initiate sites.</i>
<i>Establishing and maintaining effective working relationships with investigators and site staff and liaising with investigators to ensure that the trial is completed successfully and full recruitment targets are achieved.</i>
<i>Reviewing and processing all edit checks/data queries generated for allocated centres.</i>
<i>Record, reporting (if applicable) and following up, serious adverse events according to Garden's Standard Operating Procedures (SOPs).</i>
<i>Performing study closure visits, maintaining communication with senior CRAs regarding study progress, providing necessary support for inspections, performing all job functions according to the relevant SOPs and regulations and performing as a lead CRA when required.</i>

On the other hand, Garden's website summarises the purpose of the monitoring. According to Garden, the purpose is to verify that:

1. *'The rights and well-being of the human subjects are protected*
2. *The reported trial data are accurate, complete and verifiable from source documents*
3. *The conduct of the trial is in compliance with the currently approved protocol/amendment(s), GCP and the applicable regulatory requirements.'* (Garden website)

The main reason that the full list of the responsibilities of Garden's CRAs is presented in this section of the Data Analysis chapter is that the researcher wants to demonstrate that the occupation of CRA presented in this research is representative of the global population of CRAs. Indeed, the comparison between the description of the CRAs' duties and the overall monitoring purpose with the full list of the monitor's responsibilities, as described by the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (1996) (see Appendix 4), could lead to the conclusion that Garden's CRAs are a typical representative sample of the global population of the 22,000 to 25,000 CRAs (Tufts Center for the Study of Drug Development Impact Report, 2012). Although Garden's CRAs are engaged only in non-commercial studies, their duties and responsibilities are similar to those of CRAs who participate in commercial trials. It is important to highlight that non-commercial trials are not rare but constitute 20 per cent of the total number of European registered studies (European Medicines Agency, 2015). In both commercial and non-commercial studies the key role of a CRA is the monitoring of clinical trials. Indeed, Eunomia, Garden's Director, differentiates commercial from non-commercial trials only by mentioning the different types of sponsorship (academia or other non-commercial institution versus pharmaceutical company, biotech company or device manufacturer).

Hence, it is clear that the CRAs who work for Garden and are examined in this research have typical duties and responsibilities, common with other colleagues of other organisations, and as a result the findings of this study can be compared with the results of future studies of the same occupation. As the role of Garden's CRAs has been described, the rest of this section will focus on the presentation of the demographics of the sample of the research. The data were collected at the end of each interview (Questions 6.0 of Appendix 5: Demographics, to be asked after the interview).

The female respondents were in the majority as 24 out of 29 employees (82.7 per cent) interviewed were women; only three out of 21 employees (14.2 per cent) who were hired as CRAs (current or ex-employees) from the organisation were male (two who were on fixed-term contracts and one who has changed career path but is still inside the organisation). In particular, only five out of the 21 employees (23.8 per cent) interviewed and classified as CRAs had a fixed-term contract, whilst all others were permanent after a successful six-month probation. At this point, it should be clarified that the employment contract for permanent CRAs does not include the remote mode of work (i.e. WFH) as a condition of employment. In fact, this is an informal arrangement with the employer (although the job description gives a clear picture of the WFH status) and this approach is in line with Hilbrecht et al. (2013) who state that both informal agreements and terms in employment contracts are common in cases of telework.

The most frequent (mode) age range of a CRA was 30-39 with 13 (12 women) out of 21 (61.9 per cent) belonging to this age group; four were aged 20-29; two were aged 40-49; and two were aged 50-59. Concerning their marital status, 22

out of the sample of 29 (75.8 per cent) were living with their partner whilst only five CRAs were not in a relationship (three of these were living with relatives). Only two CRAs were living alone at home whilst 10 had at least one dependant living with them. In all cases, dependants were children: seven CRAs had one child, one CRA had two children; and two CRAs had three children. Six CRAs had at least one child of pre-school age (<5 years) whilst only one CRA had a child aged above 10 years. Table 11 summarises the aforementioned details.

Table 11: Details of the CRAs

Female CRAs: 18				Male CRAs: 3			
Age Group	Age Group	Age Group	Age Group	Age Group	Age Group	Age Group	Age Group
20-29: 3	30-39: 12	40-49: 2	50-59: 1	20-29: 1	30-39: 1	40-49: 0	50-59: 1
I live with my partner: 14				I live with my partner: 2			
I live with relatives (not partner): 3				I live with relatives (not partner): 0			
I have no children or my children do not live with me: 9				I have no children or my children do not live with me: 2			
I have 1 child: 7				I have 1 child: 0			
I have 2 children: 1				I have 2 children: 0			
I have 3 children: 1				I have 3 children: 1			

CRAs' annual salary is currently between £32,277 and £38,511 plus London allowance (£2,323), which is the same for all staff of the organisation. CRAs' salary is classified as grade six on an eight-grade-structure single pay spine. This is the reward for permanent staff but does not apply to fixed-term-contract employees who are hired as freelancers. Indeed, at the period when the interviews took place, five of the interviewed CRAs were hired as freelancers (contractors as they are called by the management team). The reason for using

them (even if, generally, they have a significantly higher daily rate of pay than permanent staff) is that they are high-calibre employees with minimal requirements for additional training, who cover with their experience urgent employment needs (mostly maternity leave). By using freelancers, the Garden does not reduce financial costs, as Clark (2000) suggests, but as he mentions, they are used to import skills that do not exist in-house and at the same time they have reduced contractual obligations.

The majority of CRAs interviewed had a relatively short time of service in the organisation as the Garden started its operation in 2007. Since then the Garden has been in constant growth and expansion with the total number of CRAs continuously increasing, having at the time of the interviews (the first half of 2014) more than 15. In particular, only three of the currently recruited CRAs have been working for the Garden for more than three years, whilst the two interviewed employees who left the Garden for another organisation worked there for approximately three years. The range of total years of experience for working as a CRA varies from eight months to 14 years, whilst the mean and median numbers for working experience are respectively 5.47 and six years. The range of time spent working as a home-based CRA is from 1.5 months to 11 years; the mean and median numbers for years of working as a home-based CRA are respectively 3.3 and two. In fact, 12 out of the 21 CRAs have worked from home only for the Garden, 10 out of the 21 had additional experience in clinical trials in different roles (not as CRAs) and seven out of the 21 work or were working 3-4 days per week (a full-time employee is considered as one who works 35 hours per week, usually five days a week). Table 12 summarises the aforementioned details of CRAs' working experience.

Table 12: CRAs' working experience

Years of experience working as CRA	
CRA with the minimum working experience	8 months
CRA with the maximum working experience	14 years
Mean (average) years' experience working as CRA	5.47
Median (middle value) years' experience working as CRA	6
Years of working as CRA from home	
The period of time that the CRA with the minimum working experience as home-based employee has worked	1.5 months
The period of time that the CRA with the maximum working experience as home-based employee has worked	11 years
Mean (average) years' experience working as CRA from home	3.3
Median (middle value) years' experience working as CRA from home	2
12/21 (57.1%) of CRAs have worked from home only for the Garden 10/21 (47.6%) of CRAs have worked in clinical trials but also in a different role 7/21 (33.3%) of CRAs are part-time employees	

The following tables 13 and 14 offer an analytical presentation of the demographics and working experience of all 21 CRAs who participated in this research.

Table 13: Demographic Data of the CRAs

Name of CRA	Sex	Age Group	Marital Status	No of people living in my house/flat (including me)	No of dependants	No of children	Age of first child	Age of second child	Age of third child
Danais	F	30-39	with partner	2	0	0			
Hera	F	30-39	with partner	2	0	0			
Artemis	F	30-39	with partner	3	1	1	4		
Athena	F	30-39	with partner	3	1	1	2		
Demeter	F	30-39	single	1	0	0			
Hephaistos	M	30-39	with partner	5	3	3	10	9	8
Hestia	F	20-29	with partner	2	0	0			
Gaia	F	20-29	with partner	2	0	0			
Thetis	F	30-39	with partner	4	2	2	6	2	
Aura	F	40-49	with partner	5	3	3	20	16	14
Leto	F	20-29	with partner	2	0	0			
Eos	F	50-59	with partner	2	0	0			
Chronos	M	20-29	with partner	2	0	0			
Aphrodite	F	30-39	with partner	3	1	1	1		
Kleopatra	F	30-39	with partner	3	1	1	3.5		
Medea	F	30-39	single	4	0	0			
Iphigenia	F	40-49	single	4	1	1	8		
Eros	M	50-59	single	1	0	1			
Penelope	F	30-39	with partner	3	1	1	3		
Aspasia	F	30-39	single	2	0	0			
Eleni	F	30-39	with partner	3	1	1	2		

Table 14: CRAs' Working Experience
(Questions 6.7, 6.8, 6.9 & 6.10)

Name of CRA	Years in the same position (at Garden)	Years in monitoring clinical trials	Years working as CRA	Years working from home
Danais	1.5	1.5	1.5	1.5
Hera	1	3	3	2
Artemis	6	6	6	6
Athena	1.25	9	9	1.25
Demeter	1.25	1.25	1.25	1.25
Hephaistos	1.5	5	5	2.5
Hestia	1	4	3	1
Gaia	1	3	3	1
Thetis	4	7	6	4
Aura	0.5	14	14	0.5
Leto	0.66	2	0.66	0.66
Eos	2	20	7	7
Chronos	1.5	1.5	1	1
Aphrodite	1.5	2.5	1.5	1.5
Kleopatra	3	7	7	4
Medea	0.75	8	6	5
Iphigenia	3	20	10	6
Eros	0.16	15	8	7
Penelope	5	8	8	6
Aspasia	0.125	4	3	0.125
Eleni	3.5	11	11	11

From the eight non-CRAs who were interviewed, seven belong to the management team. Table 15 presents the role and some characteristics of their working experience. Moreover, Table 15 identifies another perspective of the relationship between management and WFH. As all managers have personal experience of WFH, consequently their input into this research is important. They do not evaluate and comment on home-based CRAs as they are people who are working only from the office. Therefore, they have an understanding of the phenomenon, which is based also on personal experience. The Director had the least personal experience of WFH as she started WFH just a few months

before the interview, but as will be presented later, she made the decision to implement the remote structure of work at Garden.

Table 15: Management Team

Name	Role	Grade	Gender	Years in the same position	Years of past experience working as CRA	Years of working from home (including occasional work)	How often do you work from home (days per week)?
Eunomia	Director	Not known	F	8	11	0.2	1
Themis	Quality Manager	8	F	6.5	0	10	1
Eirene	SCRA	7 (£39,685 - £47,328)	F	4	19.5 (she answers for both CRA and SCRA roles)	12	5
Clytemnestra	SCRA	7 (£39,685 - £47,328)	F	4	3.5	2 (only for another organisation)	As needed
Hypatia	SCRA	7 (£39,685 - £47,328)	F	2.25	5.25	3 (only for another organisation)	1
Artemisia	SCRA (ex – left Garden in 2012)	7 (£39,685 - £47,328)	F	2.5	2.5 (1.5 years in Garden before being promoted to SCRA)	4	1 (in her current employer – in Garden she was office-based)
Poseidon	Clinical Trials Systems Executive	Not Known	M	7	0	3	1

Concerning the line management, all four Senior CRAs (SCRAs) are living with their partner, whilst three out of four have at least one child and personal experience of trying to combine family with work. As a result of this experience of the management team, they can add valuable information, in particular about the WLB, cost reduction and IT parts of the research. It is important to highlight that their experience is based not only on their managerial role but also on their

personal experience of being people who manage and at the same time are managed from a distance.

Finally, the last non-CRA person interviewed is one Clinical Trials Administrator (CTA) who is involved in administrative tasks to support clinical-trials operations and is fully office-based. The rationale behind the decision to interview an administrator is to examine whether there is difficulty in offering administrative support to staff who do not work directly at premises as there is evidence that telework and virtual managers can create problems for their subordinates because of their absence from the office (Golden and Fromen, 2011).

Before examining the operations inside the organisation, emphasis will be given to employees and their efforts successfully to combine family with work. The themes that emerged from the collected data regarding the first topic under investigation, which is Work-Life Balance (WLB), are presented below.

4.3 Working from Home and Life Balance

4.3.1 The enjoyment of Working from Home: Making my Life Easier and Less Complicated

'Not what we have, but what we enjoy, constitutes our abundance.'
Epicurus (The University of Texas at Austin, 2007)

The overall attitude expressed by the majority of participants was that WFH was a positive mode of work which can promote the overall quality of life. Indeed, when CRAs were asked about their preferable workplace (Question 1.1.4: Do

you prefer to work from home or office and why?), only three out of the sample of 21 CRAs (14.2 per cent) expressed a rather negative overall attitude towards WFH as they stated that they preferred to work from the office. However, one, Hera, found positive elements in WFH, such as waking up later, commuting less and having the opportunity to focus more on her duties when at home. None of these three CRA respondents have children or childcare responsibilities, all of them are in the 30-39 age group and they all live with their partner or other family members, whilst for one of them, Aspasia, WFH is a totally new mode of work as she has never experienced working away from an office in her career. The majority of CRAs declared that they preferred to work from home. In particular, when asked about their preference (Question 1.1.4), 13 (61.9 per cent) confirmed that they preferred to work from home, five (23.8 per cent) were neutral and only three CRAs (14.2 per cent) (Aspasia, Hera and Hephaistos) stated that they preferred to be office-based.

The majority of CRAs (61.9 per cent of the respondents) confirmed the findings of Vermaas and Bongers (2007) that one of WFH's main advantages is less commuting time. In particular, 13 CRAs, when asked to give feedback on their experience of WFH (i.e. questions 1.1.3: How do you find WFH?, 1.1.4: Do you prefer to work from home or office and why? and 1.1.5: How do you find this style of working concerning other aspects of your everyday life? Do you find it positive or negative?), mentioned the reduction of commuting time as one important benefit. On the other hand, confirming Maruyama et al. (2009), who suggest that saving commuting time is not a primary reason for organisations to implement telework plans, none of Garden's management team linked the decision to implement WFH with saving commuting time (question 4.1: How did

the idea of working from home start in the organisation? What was the reason for implementing WFH plans?).

Besides time, a decrease in commuting at peak hours was mentioned as a way of decreasing levels of stress. Indeed, Iphigenia, a CRA with more than 15 years' working experience, when asked about her preferred place of work (question 1.1.4: Do you prefer to work from home or office and why?), stated:

'I don't particular enjoy the commute to the office on public transport so it saves kind of the stress involved in trying to get on trains and trying to push crowds of other people.'

However, it is not only commuting by train that creates stress; Cleopatra mentioned that WFH helped her in reducing driving time. She mentioned:

'I think it works very well; basically because you don't waste in commuting. Commuting is a nightmare, especially if you are driving...'

CRA's also gave evidence that WFH offered overall flexibility and could improve aspects of their everyday lives (question 1.1.5: How do you find this style of working concerning other aspects of your everyday life? Do you find it positive or negative?). To give an example, Chronos, a CRA, suggested that minor jobs within the neighbourhood could be done without influencing the total daily working hours:

'If you need to pop to the shop (to) get something, (it) is much easier, or if you have a doctor's appointment, you can go and do that and it doesn't change your working day because you still have the same time to do that. Where if you are working in the office, you would have to go (to) the doctor's appointment but also miss your time at the office...'

In other words, an office-based employee who has a GP appointment needs a recorded 'miscellaneous leave' for a few hours, whilst the commuting time to the office after the appointment will increase the total hours of the employee's absence. Hestia's GP opens at 9.00; she would have to ask for leave if she

were office-based. Aphrodite also claims that WFH may be useful for her son's GP appointments. In particular, she mentions:

'... that thing [WFH] is handy with [medical] appointments for [name of her son who is one year old].'

During her lunch break, Hestia mentioned that she could go to the bank; Medea stated that she could go to the post office. Danais mentioned that, because of WFH, she found time to renovate her house; she explained that she had builders around at the same time as she was working at home. Danais declared that it was convenient in case of an emergency, if something was needed.

Eunomia, the Director of Garden, when asked about her personal benefits when working from home (question 4.8: What are your personal benefits when WFH?), mentioned that the one day per week that she worked from home was convenient for arranging deliveries or having a proper lunch and generally helping her WLB without having an adverse impact on the job she was doing.

Medea highlighted the benefit of having a proper lunch. She suggested:

'I get to eat a good lunch every day; I am making [it] myself and it's fresh; I am not relying on a canteen...'

Another example of the way that WFH affects aspects of everyday life is generated by Gaia, one of the younger members of the team of CRAs. In particular, she mentioned that WFH could boost her leisure time:

'You can do things after work; if I finish work between 5 and 5:30, I can go to the gym after that time instead of waiting to 7 or 8.00. If I had to go to work, then come home, have dinner and then go to the gym, I can do a lot earlier and still have an evening in myself as well.'

Gaia, who has no children, stated that WFH was convenient for leisure activities, confirming Hilbrecht et al. (2013) who suggest that leisure activities

are important for teleworkers usually when they are male or female without children at home.

Leto, a new CRA, found WFH convenient as she could work different working hours. Artemis, an experienced CRA who lives outside London, found that WFH gave her the opportunity to avoid everyday travel to London. Eros, a CRA who lives alone, suggested:

'... you may have a job to do, you need to run and do something, you can schedule that in your day to do it or, you know, if you have a delivery of a parcel, you are there so you can get it and you don't have to rely on [a] neighbour...'

Iphigenia said that the dress code at home was casual and, as a result, she could work more easily. Actually, she enjoyed this style of work:

'... it is not like really working'.

However, Clytemnestra, one of the Senior CRAs, sets the limits of the casual dress code. She expects people not to work with pyjamas from their bed as it is not healthy. She stated:

'I personally think that, when you are working, you set up a home-office situation; therefore, when I phone someone, I don't care what the background looks like, but I don't think it's healthy sitting on [a] bed and working in your pyjamas; you shouldn't be working in your pyjamas, you know [laughing]. In the same way I need to make myself presentable to come to an office or go to site; I don't think that it's unreasonable to expect people to be presentable. I don't mean in business dress or anything like that, but I don't think it's unreasonable to expect people to be presentable during office hours.'

Penelope found WFH helpful with hobbies. Indeed, Demeter, who lives alone, claimed that, because she was an employee who worked from home, she found time to enrol on a photography course and also, when she was at home, she could do the washing or cooking whilst working.

Indeed, the link between domestic jobs and WFH is another topic investigated in this research. All 21 CRAs (100 per cent of the sample) declared that WFH was compatible with domestic jobs (question 1.1.10: What about domestic jobs? Is it helpful or not to work from home?); washing, cooking, running the vacuum cleaner and ironing were all typical jobs that could be done. Eros, one of the few male CRAs interviewed, who lives alone, stated:

'I think it's helpful, yeah, because you can load up your washing machine, it doesn't take any time to do that at all, but if you are in the office you couldn't do that probably. You could do that during your lunch break, for example; you can run the Hoover if you want to. You've got sometimes to do some things like personal things you can do.'

Artemis highlighted another important reason why working from home could be helpful with domestic jobs. She felt that she could do more domestic jobs as she was:

'... not spending three hours per day commuting, it is dead time'.

In addition, Medea clarified that she could do cleaning before starting and immediately after finishing work as she had no commuting:

'... cleaning; I can do until 9:00 [am] and then I can wait until the evening...'

Hera, another CRA, said she enjoyed the fact that she did not have to wake up so early in the morning; Themis, the Quality Manager, who needs two hours' travelling time for a single trip from home to Garden, found the day that she worked from home a good opportunity to lie in bed more but at the same time to start working earlier and to be more productive. She lives in the countryside and said that, on the day she worked from home, she found the opportunity to spend two hours exercising with her horse at the stables during lunchtime. Despite this

two-hour break, she declared that she started working earlier and finished later, having a more productive but quite often longer working day.

Athena focused on the balance between personal and professional life that WFH offers. She stated:

'... you can organise your time as you want between personal life and professional life and this is really interesting especially when you are living in such big city...'

Eleni said she enjoyed the autonomy that she had when choosing to work from home. She mentioned:

'I like the autonomy, I like working by myself with the option of working in the office if I needed to...'

Similarly, Aura highlighted the freedom that WFH offered. She stated:

'I like it because you have freedom, you save commuting time, you cut down completely, you can focus more...'

Hephaistos said he enjoyed the flexibility that WFH offered. He claimed:

'... it is easier to manage both work and personal aspects of your life; you have the flexibility.'

Danais found that, with WFH, she could start and finish earlier every day, enabling her still to work seven hours daily, whilst Artemis found that WFH could motivate her to do things afterwards which she would not do if she were working at an office:

'I do Pilates on Wednesday when I work from home; if I am in the office, you know I would lie down, I would be tired; if I work from home all day, then I am glad to go out, it's more appealing'.

Hestia finishes work at 17:00 at home and has already finished with cooking a meal for herself and her husband. Then she drives to pick up her husband from the train station; she highlighted how convenient this was rather than both returning home by train.

Finally, WFH gives the opportunity to Medea, a CRA who lives with her family, to work for an organisation in London, whilst she actually lives in the Midlands. She stated that she lived away from most companies involved in clinical trials, which were based in London or outside London, in southern England. In line with Olmsted and Smith (1994) suggestion, she stated that she could benefit from WFH as she lived in a less expensive region than the London area but still worked for an organisation based in central London.

The following section emphasises another important aspect of the Work-Life Balance, the family factor.

4.3.2 Being Flexible with Work Benefits my Family as Well

All the CRAs who were asked, even those with no personal experience of childcare, stated that WFH could be a useful tool which offered more flexibility (question 1.1.7: Does WFH help you with childcare or not? Do you think that WFH can be helpful with childcare?). They suggested that it increased parents' time with children and, as Felstead et al. (1996) point out, decreased childcare costs. There are eight CRAs who have at least one child aged 1-10 years old who need childcare and all stated that WFH could be very beneficial. One of them, Cleopatra, stated that she did not need to wake her daughter early to go to nursery:

'... it's whenever she wakes up, sometimes earlier, sometimes later, so I think this is quite good and it is quite important for me'.

Penelope declared that she found that WFH increased the time that she spent with her son:

'I can be there a bit more in the mornings and in the evenings, which definitely helps. So I don't know if my son is aware of this but I am definitely aware of this.'

Athena suggested that WFH could allow her to visit the nursery if something unexpected happened, whilst Thetis claimed that WFH reduced her morning stress associated with preparing children for school.

On the other hand, there is no evidence from this research that WFH eliminates the need for childcare. There were no respondents who declared that they did not use childcare as a result of WFH. The common perception that CRAs' replies create is that WFH reduces the overall costs and the total hours required for having professional childcare staff around the children. For example, Hypatia, a Senior CRA, mentioned that she would like to have more than one day of WFH, to decrease even further the total hours required for childcare. Since he was two-and-a-half, she has taken her four-year-old son with her to a nursery near Garden. The child has to spend more than two-and-a-half hours every day commuting in London; alternatively, her child would have to stay for three more hours at a nursery near her residence, reaching a daily stay of 11 hours in total, which would boost childcare time and expenses. In reality, this is not an option for the nursery as it has an upper time limit for the hours that a child can spend there, which is a total of 10 hours per day. She said that she had no relatives living nearby to care for her son when he was ill. Hypatia has to work from home or take dependants' leave and she finds that the choice to work from home is more productive for her job.

Thetis suggested that, when she was not working from home (for example, when she had a monitoring visit), she had to pay £15 per day for picking up and dropping off her child at the nursery. WFH also helped her to reduce levels of

stress related to having to pick her daughter up from the childminder at a certain time as the childminder charged £5 for every 10 minutes' late collection.

Iphigenia, who has an eight-year-old daughter, said she found that WFH helped her to mind her daughter and spend some time with her during lunch break when the schools were closed but without paying for a childminder as the girl was old enough and independent enough not to disturb her when she was working. This supports evidence from O'Neill et al. (2009) who suggest that home-based employees are more likely to have children at home than their office-based equivalents. Generally, the governmental guideline for childminders clarifies that:

'At any one time, childminders may care for a maximum of six children [including childminder's own children] under the age of eight. Of these six children, a maximum of three may be young children, and there should only be one child under the age of one. A child is a young child up until 1st September following his or her fifth birthday. Any care provided for older children must not adversely affect the care of children receiving early years provision'. (Department for Education, 2014: 24-5).

With the above statutory framework, the Department for Education (2014) assumes that a child of the age of eight and above does not need too much surveillance. This is in alignment with the statement by Iphigenia who declared that her daughter did not need special care when at home and as a result she could carry on working without being disturbed by her presence. On the other hand, despite the fact that there is no legal age limit for leaving a child on their own, the National Society for the Prevention of Cruelty to Children (NSPCC), a charity in London, advises that babies, toddlers and young children (age five or below) should never be left alone, whilst usually children under the age of 12 are not mature enough to be left at home alone for a long period of time

(Northern Ireland Direct Government Services, 2014). Therefore, the need for childcare, at least until the age of 12, should be considered necessary.

Eirene, an SCRA, was an office-based worker for another organisation. She had to commute 120 miles per day when she had only one child. When her second child was born and her husband started to travel abroad, WFH was a very attractive mode of work for her. Eirene, who now has 12 years' WFH experience, the only participant with such long experience, said she still found that WFH offered her a '*superior quality of life*'. In particular, Eirene links the quality of life with the reduced need to commute. She stated:

'Much better if they [CRAs] work from home than in the office, just because you have so much dead time, particularly commuting out of London. As the [other] staff who live one hour or one hour-and-a-half commuting way and if they have to come to the office every day, they would be so [much] more tired, the dead time they can't account for. You cannot work in a commuting train, because usually you can't find room to sit down, nor to do work...' [Eirene]

Eirene's statement is important as she highlights that, because of crowded trains, commuting cannot be combined with working time. As both Artemis and Eirene pointed out, commuting is '*dead time*'.

Hephaistos, a CRA and father-of-three, stated that his wife was a full-time mother who had full responsibility for childcare; he had a room-office upstairs where he worked alone without having children playing around, confirming Mustafa and Gold (2013) who claim that the majority (16 teleworkers out of 20) of the sample of their research tries to separate the space dedicated only to work from the rest of the house. Hephaistos's response also verifies Hilbrecht et al. (2008) who suggest that WFH does not change gender roles within the family unit. Generally, despite the fact that no female respondent from the sample declared that she did her job because of childcare needs (although they

admitted that WFH was convenient for childcare), the fact that the majority of the CRAs are female, and how this links to their role as mothers, is a topic that needs further research. Through a critical realist perspective, and in an effort to uncover any hidden realities, an analysis of available statistics and demographics can be a good starting-point for a future investigation which would focus on the reasoning behind the phenomenon. Artemisia, an ex-SCRA, was asked to comment about the fact that the overwhelming majority of employees in the CRA profession were female. Indeed, she was asked whether women chose to become CRAs because they wanted to work from home. She stated that CRA was not a common entry-level profession in the pharmaceutical sector and thus people had no idea that they may end up home-based when they chose sectors and careers. On the other hand, she said she believed that, perhaps because women very often had childcare obligations, they chose to stay longer at this position and not to progress further in their career.

The majority (18 out of 21, or 85.7 per cent) of CRAs declared that they had no elderly or disabled caring responsibilities and they could not express an opinion about how this kind of care could be combined with WFH (question 1.1.11: Do you have an elderly or disabled person to take care of?). Hestia was one of the few CRAs who lived near her parents and helped her mother who:

'... is not so well. My mum lives 15 minutes away from me, I used to live there before I moved out, I moved out six months ago, so I used to live with her and work and some days, even if it's not about her, even if I am not well or something, I don't want to cook or I just want someone to make me lunch or something, I go early morning to her home, or if she needs me and she is home alone and she is not feeling very well, it's just easy for me to take my stuff and go to her and just be in the house in case of everything.' [Hestia]

Another CRA, Medea, lives with her parents and her mother is a patient:

'I am on hand in case of emergency, or if my mother needs anything, I am close; I don't have to worry about [her] being on her own.'

Eros has an 80-year-old mother who lives near his house. By working from home, he has the opportunity to visit her regularly to check her. In the past he had experience of WFH and taking care of an ill person with a terminal disease.

He clarified:

'My wife has died a year back but she liked it [WFH] when she was here. She liked [that] I could take care of her when she was ill. But now, I don't have anybody living here.'

However, WFH is convenient not only for looking after children or adults. Literature suggests that WFH may be convenient also for caring for pets (Hilbrecht et al., 2008) and Eros was the only CRA who confirmed this. Indeed, he was one of the few CRAs with a pet (only four CRAs mentioned that they owned a pet – question 1.1.12: Do you have a pet?) and, as a result, he had experience of trying to combine working with caring for an animal. Eros had a dog living with him and said that he found it convenient to work from home. He explained:

'WFH is good with the pet [dog], because the pet can be here. When I go to work, I have to drop off the pet to a friend or my mum; you know, to drop her off to someplace and go to work and pick her up afterwards. But when I WFH, she [the dog] can stay with me.'

On the other hand, the three CRAs who said that they had a cat living with them admitted that cats were independent enough not to need constant care and physical presence. In other words, they found that WFH was not something that helped them with taking care of their cat.

WFH is convenient not only for the majority of homeworkers; other members of the family very often find it convenient when their partner or parent is often at home. Iphigenia described the situation with her eight-year-old daughter:

'My daughter obviously likes me being at home. Because when she comes home from school, she prefers not to have to wait until I am back home from work; so I think, from her point of view, it makes her feel more comfortable and happier; even if I am working she can at least come and see me if she needs to.' [Iphigenia]

Gaia mentioned that her husband was happy to find 'nice cooked meals', whilst Aura stated that it was nice to have children around during school holidays even if they sometimes disliked the fact that she was working and was not paying so much attention to them.

Even though Wapshott and Mallett (2012) suggest that working at home can bring conflict with other members of the family and their new roles, there is no evidence in this particular study that a major difficulty can be caused because of other members' presence or absence. For example, Eos, an experienced CRA, has a husband who works irregular times and WFH gives her the opportunity to increase the time they spend together. She mentioned that:

'... my husband is [a] train driver so it works quite well that, if he is working early or late, sometimes we can go for breakfast together or for lunch together, so I think I see more my husband [more] now than when I worked in the office.'

Hera's partner also works from home. She gives a picture of the current working situation with her partner. She stated:

'At the moment, [her partner]... is also working from home so we both spend a lot of time and [it] is quite nice to be both at home because, well, in the past I was working alone and he was working from the office and I find it actually pretty much easier to work with him [now] and sometimes he helps me with IT problems, for example.'

On the other hand, Aphrodite mentioned that her parents asked her if she would be at home so that they could call her to have a chat and Hephaistos stated that children were sometimes not happy that they had to be quiet and their attitude could create high tension. However, generally, all these problems are minor and

there is no evidence from this research that these misunderstandings and micro-conflicts can influence the employees' performance or their overall WLB.

Another angle of CRAs' relations with other family members was highlighted by Hestia and Hephaistos. In particular, Hestia described her husband as somebody who expected her to perform domestic jobs as she was at home and Hephaistos described himself as a working father who was not involved in childcare at all even if he was working from his office at home. This information about Hestia's husband, or Hephaistos's non-involvement in childcare, can be perceived as evidence that WFH cannot change roles inside the family (Hilbrecht et al., 2008) nor introduce equity to those who live in a traditional patriarchal family environment (Sullivan and Smithson, 2007; Sullivan and Lewis, 2001; Hilbrecht et al., 2008), but again there is no evidence from this research that such attitudes may influence CRAs' performance negatively.

However, despite all the aforementioned advantages of working independently at home, there is evidence, from a psychological perspective, of the existence of a significant drawback when working alone at home; the next section expands on this issue.

4.3.3 Feeling Lonely and Isolated

'You don't meet anybody, you don't talk to anybody, it's quite lonely, but the job is lonely as well'

Hestia, CRA

The main negative point about WFH that this research has identified is loneliness. Without receiving a direct question about loneliness, 11 CRAs (52.3

per cent) from the sample mentioned, at some point in their interviews, that WFH could be linked to feelings of loneliness and/or isolation. In particular, Table 16 presents the demographic profile of the sample (including the one SCRA who is home-based) who highlighted this issue. The last column of Table 16 includes the interview questions which stimulated the relevant answer. The researcher added this last column to the table as he wanted to demonstrate the existence of a variety of people who considered this issue a problem. Indeed, different groups of people, of various age groups, gender and marital status, with different dependants' needs, mentioned the problem of loneliness in different parts of the interview. This mosaic of people who mentioned this problematic angle of WFH could lead to the conclusion that loneliness is a generic characteristic of this mode of work and not an issue of only one particular category of the sample. Some of the examples of evidence of loneliness will be discussed.

Table 16: Demographic profile of those who mentioned loneliness and/or isolation as a characteristic of WFH

Name	Position	Gender	Age group	Marital status	Number of people living in my house	Number of dependants	Question captured the issue
Hera	CRA	F	30-39	with partner	2	0	1.4.9, 1.5.9
Artemis	CRA	F	30-39	with partner	3	1	1.4.1, 1.4.9
Athena	CRA	F	30-39	with partner	3	1	1.1.3
Hephaistos	CRA	M	30-39	with partner	5	3	1.1.4, 1.4.9
Hestia	CRA	F	20-29	with partner	2	0	1.1.3
Gaia	CRA	F	20-29	with partner	2	0	1.1.7, final statement
Eirene	SCRA	F	40-49	with partner	4	2	4.14, final statement
Chronos	Ex-CRA	M	20-29	with partner	2	0	1.1.8, 1.4.9
Cleopatra	CRA	F	30-39	with partner	3	1	1.1.1
Medea	CRA	F	30-39	single	4	0	1.4.4, final statement
Eros	CRA	M	50-59	single	1	0	1.1.7, 1.1.9
Eleni	CRA	F	30-39	with partner	3	1	1.1.7, 1.4.9

In a humorous way, Danais claimed that, when she met her partner, she talked non-stop as she was spending her entire day alone. She stated:

'If I finish work at 4 [pm] and he comes at 7 [pm], then I am really, really, ready for conversation'.

In a similar way, Aura states:

'If I am at home for more than three days, I start [to] go mad'.

However, Medea did not blame only WFH for sometimes feeling isolated, but also blamed the CRA's duties in general. She claimed:

'... to be honest to you, in my role, it doesn't really affect whether I am working from home or office, as I can do the job equally well regardless of which environment I am [in]. I think of what I miss out as a CRA is, from my aspect, that you don't get face-to-face meetings, you don't speak to people and often look [at] emails, correspondence. You don't build that team rapport, that you would do at the office if you were in the office and see people all day and speak with them.' [Medea]

Eleni, who used to work for Garden from home (before having a child), said she found that WFH could be a lonely experience but she thought that this loneliness could, in a way, be considered positive as it helped her to focus more on her work. Gaia said she felt that WFH could make you feel isolated and a bit depressed and this was the reason that she went to the gym to socialise, confirming Davenport and Pearlson (1998) who suggest that WFH employees who have previously tied their lives to an office should search for alternative streams of socialisation such as charities, school boards, churches, neighbourhood associations, or clubs.

Hera, another CRA who came from abroad, said she found that WFH did not help her to have more friends, whilst Cleopatra, an ex-employee, declared that she had found it so difficult to work from home when she had just arrived in the

country that she asked her manager if she could be located in an office at headquarters. Indeed, she described her first experience of WFH:

'To be honest, at the first time, because I started in July 2009, when I started I was supposed to be home-based but at that time I wasn't used to work[ing] from home; I came from... [an EU country], I was full-time office-based and I really didn't enjoy [it], to be honest, I was feeling quite lonely, I would say, so I requested to Themis [Quality Manager] to have a permanent desk at the office. So I think it was the time that we moved to the new premises, because I think there wasn't much space at previous ones. And I requested to be office-based, I was office-based until, I would say, December 2010 and then I left for maternity leave and, when I returned, I was home-based because it was easier to pick up my daughter etc. It was more efficient, I would say.' [Cleopatra]

CRAAs are not the only employees who have faced difficulties in working from home, particularly at the start of WFH. Clytemnestra, an SCRA, had experienced WFH at a previous organisation, but when first hired by Garden as a CRA (she was promoted to SCRA after 1.5 years of service), she had the option of choosing where to work and she chose to be office-based. She claimed that the reason that she preferred to be office-based was that she wanted to *'be around people'*. After spending two years working on her own (from home), she thought that it would be better to work from an office. She explained all the limitations that she had that time:

'The reason I preferred to be office-based as a choice... I didn't have children, I didn't have a lot of family around in the house, I felt I wanted to see people every day and I wanted to see people every day that I knew, not at [a] site that I visited every few months, I wanted to have more interaction with my colleagues. I also didn't have the space; I had a limited space at home to work. So set-up-wise within my home wasn't particularly if I had a separate office that I could shut up the door, I could be more..., I actually had to have my desk in our bedroom; it was a big bedroom but it meant that the first thing I looked at when I woke up in the morning, and the last before going to bed at night, was my office desk.' [Clytemnestra]

It is worth mentioning that Clytemnestra, when she joined the organisation, was living in central London and had no children, whilst Garden was a relatively new

entity with many of its processes unclear and/or under construction. Later on, when she had her first child, she returned to work on a part-time contract (three days per week) whilst she continued to live in London and be office-based.

However, it is not only loneliness that may cause problems. Hestia mentioned that she ate more when she worked from home but she was not sure if it was the mode of the work that was to blame or her personality. Even if it was only Hestia who mentioned this association between WFH and eating more, this topic (WFH and nutrition habits) would certainly benefit from further investigation.

Generally, Hestia said she enjoyed WFH but could not compare it with working in an office as there were different working conditions in different organisations.

She explained:

'I would say [I prefer to work from] home at the moment, I mean [it] depends on what you are, from your life, I have worked from the office before and I worked in really good offices and [had a] good social life and nice people. I've worked in very bad offices with bad people, so I am working for, like, five, six years now, so I like [WFH], this is completely different.' [Hestia]

Indeed, Hestia's statement about '*bad offices with bad people*' is confirmation of Tietze and Nadin's (2011) suggestion that WFH can be used to escape a 'problematic' working environment. In addition to Hestia's concerns, Eros said he found that, hypothetically, WFH gave him the time to be engaged in many social activities but very often he did not do anything. He suggested that self-discipline was an important characteristic that was needed to make WFH useful.

In conclusion, particularly when they are not familiar with this mode of work, people may often find it difficult to operate inside a different working framework,

such as home, which in their perception is linked to other uses and roles. Generally, as childcare is considered a motivator for WFH, particularly among female workers (Felstead et al., 1996; Mirchandani, 2000; Felstead et al., 2001; Wheatley, 2012), having young children is a critical reason for CRAs to like WFH. When this factor is missing, the home-based job may be considered dull and this situation may prove problematic as, according to Dutcher (2012), dull jobs are responsible for reducing remote workers' productivity (although there is no evidence from the research). For example, Thetis mentioned that, initially, she did not like WFH, but this negative attitude turned to a positive one because of her children.

The next section examines people's suitability to work from home and tries to build the profile of an 'appropriate' home-based CRA. There is evidence that WFH may not be appropriate for all people or all phases of life and this is exactly what Section 4.3.4 will examine.

4.3.4 Working from Home Is not for Everyone

Generally, this research will suggest that WFH can also be used by other employees who work as screen users. However, very often there is evidence that those employees who have no previous experience of this mode of work, or who do not know their organisation and/or job characteristics, may need an adjustment period. The main data in this section were mainly generated from two senior managers (Eunomia, Garden's Director and Themis, Quality Manager) with CRAs having an additional contribution. To start with the CRAs,

Athena, when asked her opinion about WFH (question 1.1.3: How do you find WFH?), declared that, initially, when she came from abroad to work in the UK, she had only office-based working experience and thus she found it difficult to work from home. Medea, when asked about problems that WFH could solve or create (question 1.1.9: Does WFH create or solve problems?), admitted that, initially, for the first six months to a year, when she started to work from home, she had some difficulties in adjusting to this new pattern of work. In the previous section, it was mentioned that Cleopatra found difficult to work from home at the beginning as well, but she changed her approach towards WFH significantly after spending some time in the office and having her first child. This change of attitude is in line with Maruyama and Tietze (2012) who suggest that employees who are introduced to telework have a more positive overall attitude towards it than their initial expectations were prior to their involvement in this mode of work.

Themis, the Quality Manager, when asked about the difficulties of managing home-based CRAs (question 4.4: How easy is it to manage CRAs who work from home? Any difficulties?), mentioned that there was a training period for those not experienced in this new environment of home-based working. Indeed, she mentioned:

'We had new CRAs who come in, who never worked from home before, they might be new in [the] CRA role, or they are coming from academia or the NHS where they were office-based, and we give them a period of at least three months where they are coming at the office as much as they want, every day if they like, and we try to make sure that there is at least one desk available. It might be [a] different desk every day, but there is a desk there, so they can acclimatise and adjust to the way [of working] from home for a period. We usually find that, the first month they are in the office every morning at nine o'clock, the second month they might be seen three times a week, by the beginning of the third

month, they are working from home very happily because they need the confidence to get the work done from home...' [Themis]

However, Themis clarified that returning to the office for a period of time may also be necessary for existing staff who, for various reasons, needed to be retrained. She explained:

'... then we can see being through this process with our own members of staff, people who aren't performing well, their monitoring visit reports aren't getting [in] on time, they are not doing enough monitoring visits. We feel they don't work at the required level and we have occasions where people have to return back to the office and not as a punishment but most as a supervisory [support] so we can build in a training plan for them. We will include the trainers in that and we can have a more supervisory structure if need be until they get to a point where they actually can go out again.' [Themis]

Eunomia, Garden's Director, was asked to give a description of the profile of a home-based worker when asked about the difficulties of managing home-based employees (question 4.4: How easy is it to manage CRAs who work from home? Any difficulties?). She mentioned that:

'... people who cannot get up on time and motivate themselves to sit down at [a] desk and work when at home shouldn't work at home until [they are ready to do it]. It takes a particular time to [get] a person to work at home comfortably...' [Eunomia]

As a result of this reply, the researcher asked an additional question (What is the profile of a home-based worker?), aiming to clarify whether the Director believed that the key factor in having a good homemaker was personal characteristics or good training. Eunomia made it clear that WFH needed an initial training period and significant working experience, but she also noted that different people reacted in different ways. Indeed, she stated:

'They need to be people that have enough experience in their job to opt to do it without constantly asking questions and needing people to show and tell what to do. I think it's bad, it's not satisfactory for somebody who is new in a job to go straight in the homeworking; even someone who is experienced but new in the job needs a transition period in which they

will spend most of the time at [the] office before they gradually go out and spend most of their time at home, so, to be confident that they know what they doing and know who to ask. This is another important thing, he must be accessible [so] that, if I am at home working with you, people can email me and phone and I can return calls as soon as I can. Such kind of things, when somebody is working at home, they need to know that can meet their managers, coaches, mentors, so, if they get stuck, they can seek advice easily.’ [Eunomia]

Eunomia made it clear that it was not only the experience that mattered but also the personal characteristics of the homeworker, explaining:

‘They are people who find themselves easier to manage than others, so we had CRAs in the past who were requested to come and work from the office because they find they can motivate themselves, to discipline themselves to work in a methodically routine way, the same way as they work in the office. They find that they need to know that people can see what they are doing and shape their day and also we had people where we feel that their productivity is not good when they are not in the office and therefore we change them from a field-based status to office-based status and you cannot always tell but people who come from another job who work from home and they have had a good track record, you would expect to continue to have a good track record if they carry [on] working at home. We do have people maybe that get promoted to a role where [they] can go out, being in the field and home-based, we don’t flourish that way, either the work suffers or productivity suffers or they are not comfortable themselves because they become their own company [because] there is no social-life aspect.’ [Eunomia]

In summary, knowledge of the profession’s characteristics and the peculiarities of WFH are needed to make employees feel more confident about their presence at work. Age, professional maturity, marital status and dependants are four critical factors that seem to influence employees’ happiness and the balance between their work and personal lives; their priorities and thus their attitude towards WFH may vary according to their current lifestyle as well as their personal and family needs.

The next section focuses on the overall evaluation of the association between WFH and WLB. As explained earlier, it is important to discover whether WFH

can improve the overall quality of life of employees before suggesting any drastic changes to people's and organisations' everyday work routines.

4.3.5 Working from Home and Work-Life Balance: An Overall Evaluation

The aim of the sections above regarding WLB was to discover whether CRAs were happy to work from home. All questions from 1.1.1 to 1.1.14 targeted the investigation of CRAs' WLB. In particular, 20 CRAs were asked if they felt that they have or had a balance between their work and their personal lives when employed by Garden (question 1.1.8: Do you feel that you have a balance between work and personal life? Does WFH help you or not?). In addition, 19 of them (95 per cent) replied that they had a good WLB whilst one CRA, Medea, answered negatively, blaming the nature of the job and not WFH as a style of work. The overall attitude was that WFH could solve problems of everyday life and improve WLB. In particular, 12 out of 21 CRAs (57.1 per cent) claimed that WFH could solve problems of everyday life (question 1.1.9: Does WFH solve or create problems?). The remaining nine CRAs mentioned some negative elements of WFH or kept an overall neutral attitude towards WFH.

To start with, Aspasia, a CRA who kept an overall neutral attitude towards WFH, stated:

'... depends on the individual really, if you can manage yourself then I don't think it creates problems but if as a person you need guidance... For me it hasn't created problems.' [Aspasia]

Aura claimed that WFH did not create problems, but she clarified:

'...not in the situation I am.'

Hera said she found that it neither created nor resolved problems, whilst Medea believed that *'it is a bit of both'*. In particular, Medea stated:

'It solves problems because you can have CRAs who are located all around the country, so when you are travelling or allocating studies you can be regionalised, which means you can be in cover sites in a certain miles distance [from] where you live, so you don't have to travel so much... in my role, it doesn't really affect whether I am working from home or office, as I can do the job equally well regardless of which environment...' [Medea]

...and she continues in a more critical mood:

'...you don't get face-to-face meetings, you don't speak to people and often look [at] emails, correspondence; you don't build that team rapport that you would do at the office if you were in the office and see people all day and speak with them... you have to get discipline if you are working from home, you have to set up office hours; it's quite destructive when I am at home. I know during my first six months, a year, when I was field-based, it was quite difficult to get myself to work from home, [not] to be destructive, it took me a while to adjust to work from home and being on my own and communicate by phone and emails only, not meeting with my team members so much and being disciplined and my business day starting at [a] certain time and finishing at [a] certain time...' [Medea]

Cleopatra, another CRA, said she believed that the successful implementation of WFH depended on the workload. She stated:

'It's not itself that creates problems or solves [them]. I think it depends on your workload basically, because you have a healthy workload and it doesn't imply you to work, like, 15 hours per day, it is fine, but if you have, like, crazy workload at the end, you work all the time but that does not have a lot of influence. I think it is kind [of] independent if you work from home or in the office, I would say.' [Cleopatra]

Danais found that WFH could either complicate issues or resolve them. She explained:

'It's both sides! It helps to solve problems if, in an hour, I got a lot to do; I just sit down and do it without interruptions, which is one of the disadvantages when you are in the office... Sometimes it's not easy to work from home, it's just, depends on the task.' [Danais]

Leto, a new CRA, found that WFH could create communication problems. She stated:

'I think it creates problems in a way; for example, as I said earlier, communication problem can be, it is more difficult than being face to face with someone if you need an answer to a problem...' [Leto]

Eos, an experienced CRA, highlighted the IT issues that WFH may cause. She stated:

'The only time it may create [a] problem is if it is an IT problem with my laptop. Sometimes I ring them up [IT support] and do things remotely; they take my laptop and solve it but sometimes they just can't do it and I have to come to the office, which means I am doing an unnecessary journey being to the office to resolve my laptop problem, but it doesn't happen quite often.' [Eos]

Finally, Eros, another experienced CRA, linked WFH with CRA's personal circumstances. He indicated:

'It depends on your personal circumstances. I think, for most people, it probably helps... And probably, for some people, it doesn't help them at all. I've known people who worked from home for a time and they get very depressed and a bit lonely because they don't see anybody. I see other people, if you are from strong constitution and staff like that, then WFH seems to be fine. For me I think it suits me fine.' [Eros]

It is obvious that all these critical comments from CRAs are about the nature of the work and not the CRA's personal life. There is no evidence that this question about solving or creating problems (question 1.1.9) brought to light any problems that WFH created in CRAs' WLB. The only exception is Eros's statement about the depression and loneliness that WFH may create (but not in his case) and this is a very important finding that will be analysed separately later on.

One additional concern mentioned was the longer hours that many of the CRAs worked from home, but despite this drawback, the majority were happy with their WLB, confirming the suggestion of Maruyama et al (2009) that, despite

working long hours, people have a good WLB. Indeed, of the 12 CRAs who mentioned longer hours of work (57.1 per cent of CRAs stated that they worked longer hours as a result of WFH), only one, Medea, declared that she did not have a good WLB, but as mentioned above, she blamed this on the nature of the job, not the mode of work. Working longer hours as a result of WFH is an important finding of this research and will be further analysed in a later section when there will be a presentation of the link between WFH and performance.

In general, 19 of the 21 CRAs interviewed (90.4 per cent) were working from home, one was not a CRA anymore but had a different office-based role inside the Garden and the other was not working at all. From these 19 CRAs – 18 of whom were working at the Garden (94.7 per cent) and one at another organisation (ex-employee) – nine (47.3 per cent) confirmed that they would change company if they had to give up this mode of work and return to working at headquarters (question 1.1.14: Would you consider changing company if you lose this mode of work and have to return at the office or not?), confirming the suggestion of Tietze and Nadin (2011) that very often employees are committed to the mode of work and not to the organisation. It is important to revisit the findings of Baker et al. (2007), who suggest that employees who work from home tend to be long-serving job-holders. On the other hand, the remaining nine CRAs (47.3%) mentioned that changing location of work was not enough to make them want to change employer. However, in this topic (question 1.1.14), the definitive choice of answer of 'Yes' or 'No' cannot give a clear description of the situation. For example, Demeter claimed that she would change her answer from 'No' (she would not change employer) to 'Yes' if she had children, whilst Medea would do the same (change her answer to 'Yes') if

she had to relocate (she now works from another city away from London). Chronos, who is now working in a different role, mentioned that, generally, lack of flexibility could be a reason to change job, whilst Eleni, who has not worked since the birth of her child (two years ago) confirmed that WFH was a strong reason in making her want to return to work. Athena suggested that she would not give up the current employer if she had to return permanently to an office because she was happy with the current terms and conditions, but she might consider such an option at a different employer. Finally, Eos linked her decision on whether to leave or to continue working for Garden with the commuting time that would be required (she now lives in a different city outside London).

The sample seems to be divided regarding the issue of commitment (question 1.1.14 – choosing between the mode of work and the employer), but after classifying CRAs according to years of service and WFH experience, there is evidence that more experienced personnel would leave the organisation if they had to relinquish this mode of work (see Table 17).

Table 17: CRAs’ experience

(Results from answers to questions 1.1.14, 6.9 & 6.10)

	Number of CRAs who would change employer if they had to work from office (n=9)	Number of CRAs who would NOT change employer if they had to work from office (n=9)
Total Years of working as CRA	58.5	37
Mean	6.5	4
Median	6.0	3
Total years of experience of working from home	31	20
Mean	3.4	2.25
Median	4	1.5

To be more specific, the nine employees who declared that they would change organisation if they had to return to office-based work together have 58.5 total years of experience working as CRAs (6.5 years is the mean and six years is the median), whilst those nine that would not leave the organisation have about 37 (four years is the mean, whilst the median is three). The total years of experience of WFH is 31 (3.4 years is the mean and four is the median) for those who would change organisation, whilst it is 20 for those who have no problem with returning to the office (2.25 years is the mean and 1.5 is the median). The assumption of the presentation of these descriptive statistics is that those CRAs who are more experienced (in both duty and WFH mode) would leave if they had to return to headquarters.

To triangulate the overall responses that CRAs gave about their WLB, the management team were asked about their perception of the contribution of WFH to CRAs' WLB (Question 4.19: How would you evaluate WFH concerning employees' WLB?). It is important to highlight that the management team (the Director, the Quality Manager, and the 4 SCRAs who are Line Managers of the CRAs) also has personal experience of WFH. All suggested that CRAs had a better WLB as a result of this flexibility. For example, Eunomia, Garden's Director, said she believed that:

'... their [CRAs'] WLB is better even if probably they work longer hours when they are at home than coming to the office, just because they can fit things around their working day in a way that they cannot do when working in the office.'

Themis, the Quality Manager, claimed that WFH improves CRA's WLB '*purely by cutting out commuting time*'. Clytemnestra, a Senior CRA, explained this benefit of reducing commuting time:

'It [WFH] is generally better for home-based employees because, when they finish their day, they are already at home'

Eirene, the only Senior CRA working full-time from home, is another member of the management team who links CRAs' good WLB with the reduced need to commute. Finally, Artemisia, the only Senior CRA who has left Garden, claimed that WFH improved employees' WLB. She stated:

'It gives people greater flexibility, more control and socially it gives them better WLB'

The following Figures 4 and 5 below summarise the findings of the most important questions asked in this first part of the research in an effort to reveal the overall acceptance of WFH among the participants of the study.

Figure 4: Summary of Most Significant Findings about Work-Life Balance

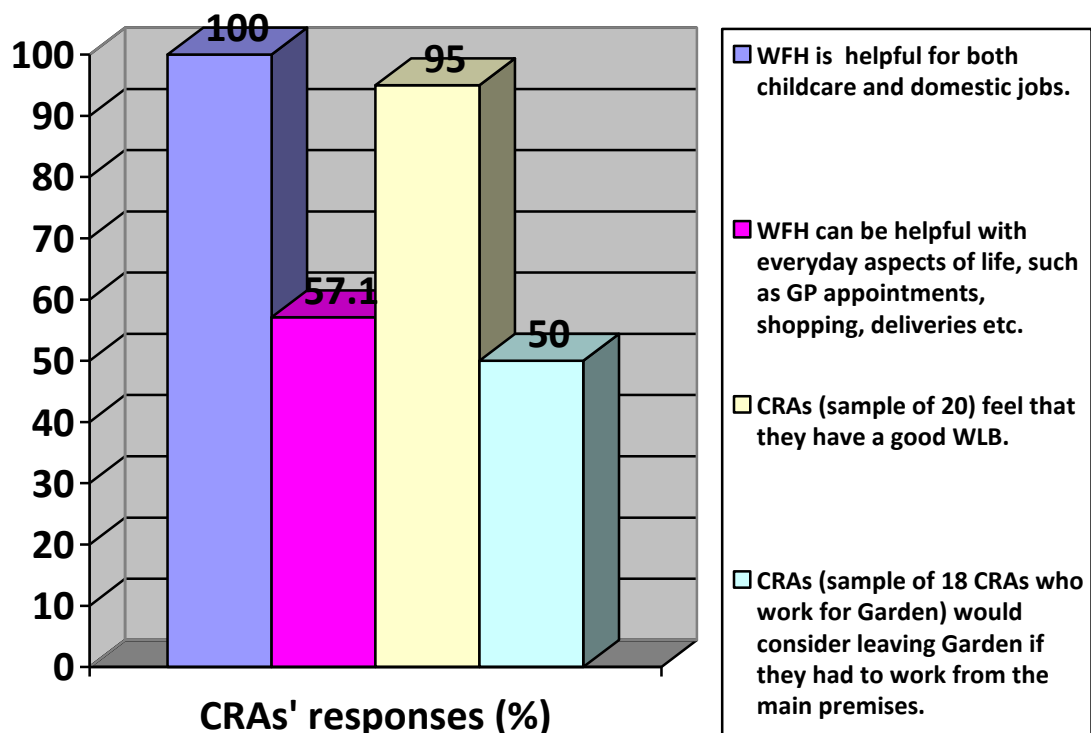
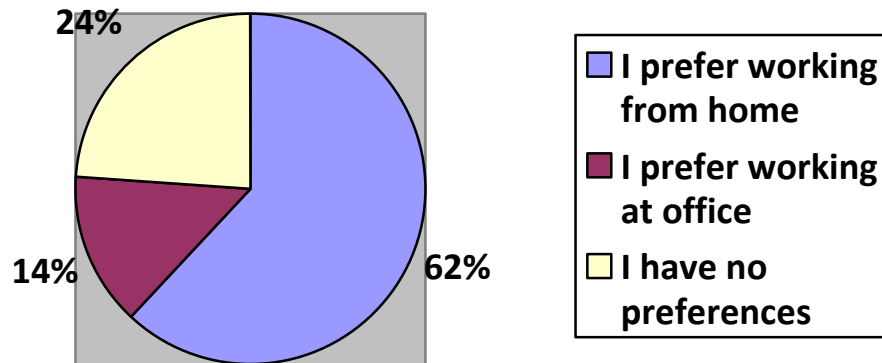


Figure 5: Do you prefer working from home or office and why?



Despite the overall positive attitude among CRAs regarding WFH, two important drawbacks have been traced in this first part of the overall analysis. First, from a psychological perspective, 52.3 per cent of CRAs mentioned loneliness and/or isolation as an important issue of their everyday working reality. Although many of them link isolation and working without interruptions with helping them to focus on work, the majority (52.3 per cent) perceive WFH as a mode of work which can create problems with the social parts of their lives. The second finding, which will be analysed in-depth later in the section about performance, is the issue of WFH leading to longer working hours. Many CRAs and members of the management team mentioned that the days that they worked from home may have been longer than the regular seven-hour working day.

The working day for a home-based CRA can start at 7:00-7:30 and finish, after seven hours of work, at about 15:00 (a lunch break is included). However, emails from the line manager, the investigators, a research coordinator or a

research nurse and the CTA who informs the CRA about the arrival of a Serious Adverse Event (SAE) form, and from other staff and collaborators who are office-based and work until 17:00 or 18:00, can unintentionally expand the length of the daily workload. On the other hand, when managers were asked about office-based employees who may stay longer in Garden premises (question 4.13: How do you think people that stay behind working late feel about those that work from home?), they declared that there was no need for Garden's employees to work longer hours. Indeed, Eirene, a Senior CRA, said she perceived longer hours of work as a problematic situation caused by self-mismanagement. She stated:

'I feel that people who stay behind late [refers to those who work at premises] aren't managing their workload properly. If you are employed to work seven hours a day, your work should capture these seven hours a day. If you are ending up consistently working much more later than that, somebody has to address that from a resource point of view.'
[Eirene]

Generally, there is no evidence from this research that Garden promotes longer working hours. Working longer hours seems to be a personal choice, confirming Hochschild (2001) who identifies that those employees who work long hours may do so because of their demanding lifestyle or because they love their work or prefer more hours at work (also at home in our case) than at home. Indeed, no member of the management team mentioned that longer hours would be expected from CRAs, whilst according to the researcher's observations when he was working as an office-based RTA, it was very rare to find a member of staff who stayed in the office after 18:00. On the other hand, Gaia, a relatively new home-based CRA with one year of presence at Garden, perceived longer hours as a necessity and a way to demonstrate her competence. She stated:

'I think I work longer hours because, when you work from home, you have to show that you are actually working, so you work harder and longer hours.' [Gaia]

Despite the fact that this research has not emphasised the reasons why CRAs work longer hours, the researcher perceives this phenomenon more as a matter of convenience and easy access to a laptop and not as a way to demonstrate loyalty to the employer. As Eos, an experienced CRA, stated, it is the nature of the workplace that permits the longer hours. She explained:

'Because your office is there, I do try to stop myself working long hours, but sometimes when you have something urgent, you sit and it has to be done.' [Eos]

On the other hand, despite the obvious negative issues linked to longer working hours, the researcher still believes that most of the research linking working from home to longer working hours (Dimitrova, 2003; Peters and Van der Lippe, 2007; Golden, 2008; O'Neill et al., 2009; Nätti et al., 2011) fails to define the total required working time. To explain further, it is not only the seven or eight hours that an employee works in premises that have to be counted as working time. The time required for commuting (particularly in cities such as London) is significant and should be added to the total daily working time. A recent decision by the Court of Justice of the European Union makes clear that the commuting time from an employee's home to a customer's premises and the opposite (for example, working at premises of pharmaceutical companies who hire, on a contract basis, CRAs from CROs) is considered as working time and this decision may affect thousands of people who work outside organisational premises on a regular basis (Court of Justice of the European Union, 2015); this decision may be considered as an important first step towards the general recognition of commuting time as working time. In Garden's case, the average

door-to-door, from home to office, commuting time of the sample's CRAs is one hour and 12 minutes for a single one-way trip, whilst generally, the average total daily travel time (including return trip) of people who work in London is almost half that of the examined CRAs [according to Massey (2014), the average time is one hour and 14 minutes]. Table 18 includes the total time (door-to-door) that all CRAs declared that they spent in reaching Garden's premises, leaving from home. It is obvious that, when avoiding more than three hours of everyday total commuting time is an option, spending occasionally half-an-hour to one hour answering some urgent emails may explain why these extra hours may not negatively influence overall WLB.

Table 18: Time for Commuting from Home to Garden

(Question 1.2.2: Do you live near to organisation's premises?)

Name of CRA	Travel Time to reach Garden from home
Demeter	30 minutes
Thetis	1 hour and 10 minutes
Aspasia	35 minutes
Cleopatra	1 hour and 15 minutes
Hera	30 minutes
Eleni	2 hours
Medea	3 hours and 30 minutes
Eros	1 hour and 30 minutes
Danais	1 hour and 30 minutes
Hestia	1 hour
Iphigenia	40 minutes
Aphrodite	40 minutes
Hephaistos	1 hour and 30 minutes
Leto	1 hour
Gaia	1 hour and 30 minutes
Athena	30 minutes
Aura	1 hour
Artemis	1 hour and 20 minutes
Chronos	45 minutes
Penelope	1 hour and 10 minutes
Eos	1 hour and 30 minutes

To conclude, it is important to note that 19 out of the 20 CRAs (95 per cent) who were asked (question 1.1.8) declared that they had a good WLB. In addition, all managers claimed (question 4.19) that they believed that WFH could help CRAs' overall WLB. When all CRAs and managers believe that WFH can make a positive contribution to employees' WLB, there is no reason for this research to claim the opposite. However, the overall improved quality of life was the first milestone of this research in the effort to answer the questions 'Are we happy to work from home?' and 'Do we really want to do it?'. Now it is time to answer the second important question: 'Is it profitable to do it?'

4.4 Working from Home as a Model to Reduce Costs

4.4.1 Working from Home as an Organisational Strategy

'So what does it [working from home] look like? There is 150,000 pages not left on printers anymore...'

Mark Adams-Wright, Managing Director, Telefónica O2 UK, 2013

Adams-Wright (2013) started his speech about the benefits of implementing mobile and remote working in Telefónica O2 UK by explaining the rationale behind the decision to implement flexible work arrangements. He stated that, soon after Telefónica became the parent company of O2 in 2005, there was an urgent need to consolidate three offices into one and to find space for 2,200 people and 1,500 desks. This extremely difficult project was the main reason that led to the decision to implement flexible working arrangements. Similarly, this same problem of finding space was a main motivation in Garden's case.

To explain, Eunomia, Garden's Director, was the person who introduced WFH when Garden was established in 2007. She had past experience of working with home-based employees in a previous pharmaceutical company where she had worked. Generally, when she was asked about the origin of the idea to use home-based employees (question 4.1: How did the idea of WFH start in the organisation? What was the reason for implementing WFH plans?), she highlighted the reasons for her decision:

'The two main reasons, one is the nature of CRA work, meaning that most of the time is spent not working from an office but working on site for active monitoring and meetings, which means that the actual requirement for desks in the office is actually not great, and the other is that we don't have a great deal of space available at our disposal at our floor or anywhere else at Garden. So, if you like these two issues that actually have the same solution worked for, because clearly a CRA who is going to travel to site is unlikely to want to come at the office first even if the site is local, and secondly because we are not in a position to give them comfortable accommodation collocated, so to use hot-desks and home-office is both cost-effective in terms of time and space. And I think more agreeable from the view of a CRA.' [Eunomia]

In addition to Eunomia's explanation, the majority of CRAs, without having any official information, assume that the two reasons (the lack of space and the nature of the job) highlighted were the main reasons behind the decision to implement WFH policies at Garden. In particular, 13 CRAs (61.9 per cent), when asked about the reason that led Garden to implement WFH policies (question 1.2.6: Generally, why do you think that the company has implemented the WFH approach?), mentioned the nature of the job. Moreover, 11 CRAs (52.3 per cent) cited the lack of space as a reason for implementing WFH. In another approach to recording CRAs' replies, 95.2 per cent of the sample answered lack of space and/or nature of job as a reason, whilst 19 per cent mentioned both.

In alignment with CRAs, Senior CRAs (CRAs' line managers) expressed similar arguments concerning the origin of WFH at Garden. Artemisia mentioned the lack of space and the nature of the job as the two main reasons that a significant part of Garden became virtual. Eirene and Hypatia confirmed that it was the Director's legacy from her previous employment experience that led to WFH, whilst Hypatia mentioned that WFH was common in the sector, particularly among CRAs. Finally, Clytemnystra, the fourth Senior CRA of the sample, mentioned all three aforementioned reasons (nature of job, lack of space and Director's previous experience).

Themis, the Quality Manager, claimed that Garden paid rent for obtaining a part of the floor, even if it was located inside one of the partners' premises; in a highly commercialised part of London, this rent would be significantly higher if there was a need to accommodate more than 15 CRAs now working from home. Although Garden is now operating in a comfortable space, it is important to mention that it started operating in a smaller space which was definitely not an attractive environment for new candidates. Cleopatra described it as:

'... a small Victorian building in the campus. It was on the fourth floor, I think; outside was okay but inside it was horrible'

Eunomia, Garden's Director, on top of the problems of space and the nature of the job of the CRA demanding mobility, gave an additional explanation for the reasons behind her decision to have remote employees:

'... there is another subject that I have forgotten, it is that from our perspective, it's not a standard role in academia or NHS; it was not then. We had to attract our staff from pharmaceutical industry... and because we were trying to compete with pharmaceutical industry, we had issues when it came to the package that we could offer to start because pharmaceutical companies offer a company car, various other benefits for being employed by pharmaceutical company, but as a public body we don't have those. The only thing we can do is make sure that the package, the actual salary, is enough to compensate [for] the lack of

those benefits and one of the ways we can also address that is if they are officially home-based, then they can charge travelling to the office as business travel, so that is also financially an advantage for the CRAs, so it is a cost-effective way, making the package more attractive without actually costing us significantly more.' [Eunomia]

As Eunomia explained, Garden is a public body which operates in a highly commercialised and expensive city, London, and which tries to attract employees from well-established pharmaceutical companies and retain them without offering a very competitive reward package. Indeed, AGCAS (2014) states that the starting salary of a CRA is £22,000-£28,000; more experienced CRAs can earn a salary of £33,000-£40,000, whilst in some circumstances salaries of up to £60,000 can be achieved. Very often, CRAs' reward package includes additional benefits such as car allowance and bonus (ibid), which are not provided by Garden. Another insight into the CRA profession is given by Glenny and Smith (2013) who created a guide for professionals wanting to work in clinical trials as freelancers. In this, they give examples of people who work as CRAs and offer an insight into the kind of people who work in the market, their qualifications, their professional profile and their daily rate so as to shape a picture of the quality of the people that organisations such as Garden have to attract and retain. One such example given in Glenny and Smith's (2013: 66) guide is the following:

'Mary is 47, a graduate in applied biology, with a PhD in pharmacology. After doing a post doc in London, Mary decided to make the move into clinical research and worked for 18 months as a CRA for a CRO, before securing a CRA role within a large, international, pharma company. Mary worked for this company for 14 years... When a redundancy package was available following a merger, Mary decided to make the move into a freelance career in order to secure better work life balance... Her daily rate is £450-£500 and she worked an average of 3 days per week last year...'

It is obvious that Garden, as presented by Eunomia, a public body which operates in a limited economic environment, could not attract and retain such

candidates without offering WFH policies. In Garden, 10 out of the 18 CRAs (55.5 per cent) working for the organisation at the time of the interviews had five or more (up to 14) years of experience as CRAs. Out of those 10 CRAs, four had a fixed-term contract with Garden covering, as explained earlier, maternity leave, whilst six had a permanent contract. Those six, who were the most experienced CRAs at Garden, had an annual salary of £32,277-£38,511 (grade six salary in 2015) plus a London allowance of £2,323. Without a company car, a bonus or private insurance, their salary cannot be considered as competitive or as significantly better than that of their colleagues working in the private sector. Therefore, as Eunomia stated, WFH as a mode of work, and the option to charge travelling to the office as business travel, operated as a cost-effective way to make the overall reward package more attractive without actually costing the Garden significantly more.

Thetis, a CRA, highlights another problem of the job that Garden has to face in attracting and retaining experienced staff and this is respect. In particular, she complains:

'Here, nobody respects you when you go to the hospital; they just think that you are intervening in their job. But when you go from the commercial side [pharmaceutical company or CRO], you get a lot of respect.' [Thetis]

This happens because clinical staff in non-commercial studies often cannot understand the role of monitors (CRAs) and feel that they just delay the process of their job, whilst monitors who represent private pharmaceutical companies gain more respect as they are often involved in the initial recruitment of medical staff who will be involved in the new study. As a result of this attitude, high-calibre employees are very often reluctant to apply for such a position in an academic environment. Generally, in a financially non-competitive organisation

in which sometimes the duties and roles are not clear to all stakeholders, WFH and the overall working conditions can be considered as important reasons for successfully attracting new staff.

Indeed, Garden is constantly growing, with the number of members of staff increasing since its formation in 2007. Greiner (1998), in his classic work on organisations' phases of growth, links the early phase of an organisation with moderate salaries, informal communication and a general period of creativity and this reality applies to a new entity such as Garden. However, despite this average total reward package, Garden managed to recruit CRAs from a large geographical area, covering a distance from Brighton to Birmingham, and generally to attract and retain experienced employees, as the majority of CRAs came with working experience from another company [only two of the 18 CRAs (11.1%) who were working for Garden at the time of the interviews became CRAs during their service inside the organisation]. WFH is definitely one of the main reasons for this success. As explained earlier, nine out of Garden's 18 CRAs (50%), asked whether they would leave Garden if they had to work from the office premises (question 1.1.14: Would you consider changing company if you lose this mode of work and have to return at the office or not?), mentioned that the possible loss of this flexibility could be an important reason for leaving Garden. It seems that neither the reputation of the organisation nor the existing reward package is enough to tie the employees to Garden.

The reason that part of Garden's recruitment strategy is analysed in this chapter is that the author of this research believes that the main contribution of WFH to Garden's overall costs reduction is the 'cheaper' high calibre people that the organisation manages to hire. People are willing to work with an average

reward package as they have the opportunity to live a more balanced life. Real estate is the second important cost that is reduced and also all peripheral costs associated with the operation of an office, such as electricity, gas, security, desks, office equipment etc. In general, Garden provides a laptop, a printer, a stand for the laptop to keep the screen at eye level (a more in-depth analysis of ergonomics will follow), a mouse, a keyboard, photocopy paper and a budgeted amount of money for the employees who work from home so that they can purchase a chair. However, the total cost of all these and their maintenance is significantly less than it would cost to have all those people working in the same centralised office. It is important to highlight Eunomia's statement that '*we do not have a great deal of space available at our disposal*' to accommodate all CRAs. It is not only the cost of the objects that do not exist at headquarters, but also the changing mind-set that produces a further cost saving. Penelope, an experienced CRA, clarifies the fact that, as a result of this mode of work, people tend to work differently. For example, they change their printing habits and adopt a leaner approach, reducing the total amount of print work, including the waste of paper left on printers (this was presented in the introductory comment of Telefónica's Managing Director), and thus reducing another organisational cost whilst being eco-friendlier.

In conclusion, the common perception of the majority of the sample (CRAs and management team) is that WFH can reduce overall organisational costs but the management team has never been involved in a scientific estimation of the overall financial benefit of this mode of work. This research does not try to quantify this benefit but aims to highlight areas which, as a result of WFH, can produce a financial profit for the organisation. Finally, an important point in this

section is the story about the origin of WFH in the organisation. A new Director, Eunomia, from a pharmaceutical company, came to create a new organisation, Garden, and introduced a modern working environment inside a bureaucratic and hierarchical environment. She had to create an organisation that would operate in one of the most expensive and highly commercialised cities in the world, and host a constantly expanding population of employees, without having the necessary office space. Eunomia made it clear that she had to recruit and retain candidates from a well-established private pharmaceutical environment and offer a less attractive reward package. As she mentioned, WFH provided significant help in solving all these issues. It is also important to highlight that Garden was created by four sovereign organisations (four partners) which all had slightly different cultures. As she described them:

'... organisations are with grading structures, people work all the way up to the ladder through the grades and spine points, institutionally hierarchical and traditional, and the leaders of [the] control applied from management and by top management and, for example, by [the] HR department are hierarchically applied so you don't actually see, you don't necessarily see that hierarchy in action unless the people at the top of each part of that hierarchy choose to exercise it, so it's not forced to people but seems to happen as this is the nature of this sort of organisation.'

It seems that, inside a traditional 'old-fashioned' public environment, the Director, Eunomia, managed to build a successful, continuously expanding organisation and a significant reason for this success was the flexibility that employees have to work from home. However, WFH is not only beneficial for organisations but can also offer significant benefits to employees; this aspect will be presented and analysed in the next section.

4.4.2 Working From Home and Family Budgeting

Every CRA in the sample of 21 (100 per cent) who was asked (question 1.2.3: What kind of costs do you save, if you save, when working from home?) to name a personal expense that decreased as a result of WFH indicated at least one. In particular, CRAs mentioned travel costs, food, beverages, coffees, clothes and dry cleaning, confirming Duxbury and Higgins (2002), and also childcare, confirming Felstead et al. (1996). Indeed, travel costs were the most significant costs that were reduced as a result of WFH. Concerning commuting expenses, 19 out of 21 CRAs (90.4 per cent) mentioned that WFH decreased their travel expenses. The two CRAs that did not mention this benefit consider this as granted as it is part of their contractual agreement that they have with the employer. Garden has to pay their travel expenses, not only to and from hospitals for monitoring visits but also when they have to visit headquarters for meetings with investigators and line managers or for other administrative tasks or training. Despite the fact that, theoretically, covering travel expenses is part of CRAs' reward package, this benefit is falsely perceived as granted by CRAs. To clarify, all other office-based employees of Garden pay their own travel expenses and therefore this benefit should be linked to the WFH mode of work and not to the employer's general policy or goodwill. In addition, Eos, a CRA with 20 years' experience in clinical trials, seven years of which were spent as a CRA (she has worked for Garden for the last two years), confirmed that WFH was not a standard policy in all clinical-trial organisations. She stated:

'In some companies CRAs do have to go to the office when they are not out at monitoring'.

Generally, office-based employees, assuming that they live inside London's boroughs, have to pay £3, which is the lowest fare for a return bus trip for an Oyster-card holder (an empty Oyster-card costs £5 to buy), to an £11.70 daily cost which is the highest charge for an Oyster-card user who travels on the London Underground in zones 1-6 (Transport for London, 2015). Ypatia, a Senior CRA, who works at home once a week, claimed that she saved £11.20 per day that she normally spent on commuting from zone 4 to Garden and for parking her car at a station. On the other hand, home-based CRAs claim all their commuting expenses as home is considered their base and every cost associated with any trip outside this base is reimbursed. As a result of this policy, eight of the CRAs have the opportunity to live outside the M25 which is considered the outer border of London, avoiding the capital's high house prices. Generally, WFH helps them to reduce overall residential costs as Olmsted and Smith (1994) also demonstrate in their classic book about flexible workplaces.

The mean (average) time that the 21 CRAs (current and ex-employees) were spending on travel to Garden from home (question 1.2.2: Do you live near to organisation's premises?) was one hour and 12 minutes, whilst the median time was one hour and 10 minutes. Both mean (average) and median, which describes the time for one-way travelling, are significantly higher than the average everyday commuting time of an employee who works in London, which is one hour and 14 minutes for both directions (going to and returning from work) (Massey, 2014). Therefore, it is important to highlight that employees who work from home have the opportunity to work in London's centre but live significantly further away. Eleni mentioned that her daily travel cost to and from London was £45; if she were office-based, she could not afford to pay this

premium. Danais used to pay £5,000 for an annual travel card when she was working for a previous employer, but now that her travelling is covered by Garden, she finds that she has achieved a significant decrease in travel expenses and a significant increase in her overall net pay. In a hypothetical scenario, in which Danais left her previous employer to join Garden with the same annual salary but now having zero overall commuting costs because Garden covers her expenses, she managed to gain $\frac{£5,000}{£32,277}$ (the annual starting salary at Garden) = 15.49 per cent increase in her annual income.

It is obvious that WFH gives the opportunity to employees to seek jobs in organisations located away from their residence. Medea suggested that WFH helped her to reduce the hidden costs of socialising with colleagues as, very often, when she was office-based, she used to go out after work with them. Penelope found that WFH helped her to reduce childcare costs. In particular, despite full-time childcare, she estimated that, if she was office-based, she would have to pay an additional eight hours per week approximately.

The only drawbacks linked to WFH that were mentioned by CRAs (question 1.2.4: Are there any bills or other costs that have been increased as a result of WFH?) were electricity and gas bills which were sometimes slightly higher as a result of spending more time at home, confirming Nakanishi's (2015) concerns about increased energy consumption resulting from working at home. In particular, 14 out of 21 CRAs (66.6 per cent) mentioned (as an answer to question 1.2.4) one or both types of bills, but generally this research did not record any significant increase in energy consumption which would lead to CRAs' discomfort.

In conclusion, childcare, commuting and residential costs can be considered the most important benefits for Garden's remote employees. Therefore, as the mutual financial benefit for both employer and employees has been presented, it is time to answer the third important research sub-question: 'Can we do it? Is there sufficient technology to support distant CRAs' 'smooth' flow of work?' This concern is presented and analysed in the following section.

4.5 The Machines in Human Service: We Work from Home Because We Can

This section focuses on people's perceptions about IT and the technical issues of their remote everyday working situation. First, participants were asked to describe preferences and difficulties that they faced with WFH. In this section, the researcher tried to identify barriers and to shed light on topics linked to the implementation of remote working (questions 1.3.1-1.3.9). However, there is no in-depth analysis of all the topics investigated and questioned. It is important to highlight that the overwhelming majority of participants in this research cannot be considered experts in technology and therefore this part of the research is based mainly on a descriptive presentation of users' everyday experience of technology. The overall aim is to discover if existing technology can support, from a technical point of view, remote workers, or if there is any kind of negative impact on their job as a result of their distance from the main premises.

As stated in Section 4.4.1, a new CRA who joins Garden is provided with a new laptop, a printer, a keyboard, a mouse, a stand for raising the laptop to eye level (if the user does not have an additional personal screen at home), a Blackberry

mobile, a plastic document holder and an amount of money (about £100) to buy an ergonomic chair. The analysis of CRAs' interaction with the machines starts with the experience of working with their laptops.

Generally, preferences regarding choice of computer device are different among CRAs. In particular, 11 of them (52.3 per cent) preferred to work using a PC, nine (42.8 per cent) preferred a laptop and one (4.7 per cent) was neutral (question 1.3.1: Do you prefer to work using a PC or laptop? Do you find any difference?). A laptop is considered more convenient for visiting hospitals (very often hospitals do not have available PCs to offer to visiting CRAs) as it is portable but is not so user-friendly when used as a desktop at home. The main disadvantage of laptops mentioned was the size of the screen. Indeed, six CRAs mentioned that they linked their laptops to a larger, external screen as they could not work for many hours at a small screen. Eos complained about headaches as she worked for many hours with her neck down while looking at her laptop, whilst Athena complained of tired eyes through spending too many hours at her small-screen laptop and bought a new, larger screen to work on when at home. Moreover, 14 CRAs (66.6 per cent) claimed that they had no concerns regarding ergonomics or any other health-and-safety issues when working from home (question 1.3.9: Do you have any concerns about ergonomics when WFH?). The main complaints expressed were about the lack of a proper chair. Although Garden offers money to buy a new chair, as mentioned above, lack of space is often a significant reason for not making this purchase, confirming Sullivan (2000) and Armstrong (1999) who support the idea that space can be a significant problem for the good implementation of

HBW. As a consequence, CRAs may find themselves working at their dinner table or sitting on a sofa. Artemis mentioned:

'We have a tiny house, I don't have a room for [a] big desk and proper chair so I sit in the dining room, on the table, on an uncomfortable chair, and if I get backache, I might sit on the sofa; probably it's not good for me.'

Although the majority of CRAs claimed that they did not work sitting on a sofa or on a bed, two CRAs (Medea and Artemis), both experienced in working from home in a CRA role, mentioned that they may work sitting on a sofa on a part-time basis. Harrington and Walker (2004) suggest that, very often, there is a lack of training regarding working from home and this research confirms it. Although relevant information about ergonomics exists on Olympus's website, it has not been communicated in an effective way and CRAs seem to ignore its existence. In particular, the entire sample of CRAs (100 per cent) mentioned that they had not been trained to work from home (question 1.4.4: Have you received training for working from home? If yes, what kind? If you did not, do you think a new CRA should receive some kind of training? Can you give some examples?); thus those who have not worked as home-based employees in the past sometimes find it difficult adjusting to the new working environment (i.e. their home).

Concerning IT issues, 20 out of the 21 CRAs (95.2 per cent) had at least one example in which they had to face a difficulty with an IT issue (1.3.2: Have you experienced any IT problems when working from home? and 1.3.3: How did you face them? What kind of help have you asked for and from whom?). The most common problems mentioned were lack of access to the organisational shared drive (nine CRAs faced this issue) and the inability to download any available new or updated software (six CRAs faced this issue). The lack of access was

mentioned as a temporary problem with a minimal, non-significant, negative result on the general workflow. Usually, staff from the IT department could resolve this problem remotely. The inability to download software, or connect to peripheral devices, was an issue linked to overall organisational security policies. Only employees with an administrative role (mainly IT staff) had the credentials to change the content of an organisational PC/laptop. All CRAs (100 per cent) complained that they did not have administrative rights to change existing software or download new software, thus they could not link their laptop with their personal printer or they could not use, for example, a new version of Adobe Reader. These issues were usually solved by a visit to Garden's headquarters and by connecting the laptop to Olympus's central system through an Ethernet cable and by contacting the IT department to fix any other problems by sending a representative to headquarters. On the other hand, this visit could not be considered a total waste of an entire working day as it was often combined with other administrative activities (for example, printing large documents, signing documents or collecting stationery items) and meetings with the trial team and/or CRAs' line managers. Although visiting headquarters could solve IT problems, calling the IT department from home and giving IT staff remote access to install/update software was also very common among CRAs. The latter could download specific software (the company that owns this software is TeamViewer) from Olympus's internal website which allows IT experts' remote access to CRAs' laptops. Generally, software updates could not be considered as an urgent matter requiring an immediate solution as they did not have any significant influence on the employee's timetable. There was no evidence from any CRA that the lack of an updated browser or Adobe Reader

created a significant problem in their workflow. From a security point of view, Hephaistos said he believed that the fact that systems as browsers were not immediately updated could potentially be a weak link in security but no other participant had such concerns or had experienced any problems with viruses (question 1.3.7: Do you think that your laptop is protected against threats?). Only Penelope mentioned that she had an experience of malware and this happened one day when she was working from headquarters. Her laptop had to be secured for a day and afterwards the problem was resolved with no further damage.

When asked about IT problems that CRAs may have experienced (questions 1.3.2 and 1.3.3), three CRAs (Eleni, Eros and Danais) mentioned that they had faced problems with their local home internet connection which could be slow, unstable or even lost for a limited time. Aura, an experienced CRA, mentioned that the longest period she has stayed without an internet connection was three days and, in order to work, she used a USB dongle. However, she stated that this had not any negative effect on her overall job. Another reason that a disruption to the internet connection was not a big issue was that all employees had mobiles (Blackberries) provided by Garden with access to the internet and their Microsoft Outlook account; this access was not through their personal broadband line but through the mobile signal, giving them the opportunity to have an alternative stream of communication. For example, Eirene, stated that, once, two years ago, thieves had cut the wires outside her house to sell them, leaving the whole neighbourhood without phone lines, and the electricity company came to install a generator to help the 20 houses that had problems. For many days, there was a disruption to her normal way of working; however,

the fact that she had internet connectivity through her Blackberry and the option to work on the premises at Garden for few days were valuable. Decentralisation can lead to the spread of security risk as managers mentioned cases when devices were lost or damaged outside headquarters, confirming Schneier (2000), a digital-security guru, who claims that usually people are the weakest link in a security system, not the machines. On the other hand, in 2013, a security breach on Garden's floor and the entrance of burglars during a weekend resulted in many laptops and mobiles being stolen, which negatively affected the office-based employees' schedules although there were no losses for Garden's home-based employees. In conclusion, both centralisation and decentralisation of staff can be linked to potential threats and measures should be taken to minimise their possibility. It is important to highlight that it may be easier to control or avoid a power-cut or a theft in a central workplace than in a home, but if it happens, it will negatively influence a greater number of employees.

Threats linked to electronic criminal activity are another important concern of remote working. Poseidon, a Clinical Trials System Executive and Garden's IT advisor, said he found that, traditionally, connection through WiFi (usually people use this type of connection at home) is more 'dangerous' than through the cable such as the one at the office [question 3.3: Is there any difference between using a laptop and using a PC (question is about security issues)?]. He explained:

'If you are working from a PC, most PCs are connected straight to the router and therefore you have the router's security protocols where, with the WiFi, because of the open space, it has a lower preview and you can pick up WiFi's much easier and crack WiFi's much easier through brute-force attack which is when you take a dictionary of passwords and you

keep throwing them at the WiFi. WiFi will not lock you out of it [as on a PC], so if you type on your phone your password too many times you are locked out. WiFi will not lock you out; it can't lock you out because of the number [of] people who have to access. Whereas only one person is accessing your phone, thousands of people can access WiFi. Therefore it will continually ask you the question whether the password is correct until the password that comes up is correct and then you have access to the WiFi, the network, this computer and all computers on that network.' [Poseidon]

Poseidon found it generally more dangerous to connect to the internet through WiFi, whilst he thought that there were no strict standard requirements from the regulatory authorities (MHRA in the case of UK-based trials) regarding the management of sensitive information such as the medical files handled by CRAs. On the other hand, he suggested that malware and viruses may affect the user's laptop but not the central system or the data, which are protected and secured in the central server; the most important thing was that the problem seemed to stay with the peripheral device and did not spread to the core of the organisation's hardware (question 3.6: What is more risky concerning attracting virus and malwares? Is it working inside the premises or outside? How can we reduce these risks?).

Quality of connectivity is another critical issue investigated in this research. Leto, another CRA with experience of office-based working at Garden (she was promoted to CRA after working as an office-based CTA for about 1.5 years), mentioned that she found her laptop, now that she worked from home, faster than her old PC at the office. Themis, the Quality Manager, confirmed that the residential internet connection was sufficient for working in a satisfactory mode. In particular, she mentioned:

'I live in an area with a slow broadband, it's not in London, and it's still fast enough for me to connect with Firepass and it's still adequate. There have been times that the [central] system has gone down and I am still working at home.' [Themis]

Themis, in her statement, made it clear that a normal broadband connection was enough to cover employees' needs and this important finding contradicts findings from McNaughton et al. (2014) who found that slow connection speed at home may reduce employees' productivity. Moreover, Themis mentioned that, even when the central system was down for technical reasons, she was still working and this finding is very important for supporting the contention that decentralisation does not negatively affect employees' 'smooth' workflow.

From an IT point of view, there was no evidence of a common perception among CRAs concerning their preferable tool of work (PC or laptop). It is important to remember that 11 CRAs declared that they preferred to work using a PC and nine said they preferred a laptop. However, the overall perception was that there was no significant differentiation in the assistance provided by the IT department to office-based and home-based employees. Hera, a CRA with experience of working in an international environment for a previous employer, noted:

'In the past, when you had [a] problem with IT, you just called them and someone was coming but nowadays, even if you are office-based... I used to have [an] IT help-desk in Lisbon [when working for a previous employer] where I had to call with IT problems and, if they were not able to resolve them, then they were sending someone from downstairs later, but it could take hours, really, so I don't think nowadays, in terms of international companies and international trials, it's such a difference, so all are remote.'

Indeed, Olympus's central IT support is located at another building outside London and therefore the help for which office-based employees asked when they faced difficulties was also remote, whilst the advice, as with those working from home, was given most of the time by telephone. CRAs mentioned that this distant support could be problematic as users very often could not understand IT terminology and preferred to have somebody help them face to face.

However, this issue was applicable to all employees regardless of whether they asked for remote help from headquarters or from their home. As Aura mentioned:

'They don't come to you; they talk from [the] phone anyway. It's the same.'

Generally, 15 CRAs claimed that WFH, hypothetically, could cause IT problems (question 1.3.4: Do you think that WFH can cause IT problems?), but no one had experience of a significant IT problem. From a critical realist perception, people's reluctance and fear is linked with the fact that they work alone and feel insecure; if something goes wrong, there is no colleague around to ask for assistance. On the other hand, Iphigenia said that she felt confident with WFH as she believed that Olympus's IT department was helpful. She had experience of working from home for a previous company with poor IT support and, when something was wrong, she had to visit the premises; remote support was not an option. Concerning hardware, 10 out of 20 (one CRA was not asked) CRAs (50 per cent) claimed that there was no hardware that existed at Garden and its non-existence at home could create problems in their jobs (question 1.3.5: Do you need a printer, fax or phone landline? Generally, do you lack at home any machinery that exists at the office?). Three CRAs mentioned that it would be convenient to have a fax at home but they also highlighted that nowadays there was no need for this. When necessary, they scanned documents and sent them by email. Another problem mentioned by five CRAs was the fact that the printer provided by Garden was inferior compared with that at headquarters, but this, too, was not a significant problem as very often they left heavy printing tasks for their visits to headquarters. Finally, four CRAs who worked in places with poor mobile reception stated that sometimes they used their landlines to participate

in tele-conferences as otherwise they were afraid that they would be disconnected during the process. In such instances, Garden did not reimburse the cost of making the call, but this was not considered a major problem.

Artemisia, an ex-Senior CRA, who compared Olympus with another company in which she currently works, stated that the IT infrastructure at Olympus was very good. She mentioned that, generally, remote employees could easily access shared drives without facing any major difficulties. Hephaistos claimed that sometimes there was no need to use Garden's laptop to log into the organisation's shared drive as he used his personal laptop and logged in through Olympus's global desktop. This option could offer significant help when the employee had to face a technical problem with the laptop provided by the employer. In particular, in Hephaistos's case, where his residence was far away from London, the use of an alternative laptop may save him time (in his case, more than three hours' total daily commuting) and effort that would be needed if he had to visit headquarters immediately to repair the damage. For him, going to headquarters to have his laptop repaired by IT staff could be combined with any scheduled visit to the premises, reducing the overall time wasted. A key point of the successful (from an IT perspective) implementation of WFH in Garden is that there is no need for extensive technical support of the home-based employees. There are very few employees (mainly CRAs) who work from home, whilst the vast majority of Olympus's other employees (more than 5,000 employees) are office-based. Here, it needs to be noted that this research examines a small, remote part of a large, traditional, office-based organisation. It is not clear whether IT support would operate successfully in the case of

many more employees needing remote access to the system or contacting the IT help-desk on a daily basis.

In an overall evaluation, this section has unveiled CRAs' everyday experiences with IT. Indeed, the few occasional technical problems identified were proved to have a minimal effect on the overall CRA performance. Thus, the initial questions of 'Can we do it?' and 'Is there sufficient technology to support a smooth workflow of remote workers?' were answered. CRAs can work from home without having any major technical difficulties that would negatively affect their performance. The data has confirmed that CRAs are happy to work from home; both company and employees gain a financial benefit from WFH and there is sufficient technology to support the remote mode of work. The next section focuses on the fourth sub-question which is about performance. More specifically, the research sub-question analysed in the following section is: 'Is CRAs' performance better when working from home? Is there a difference in their performance?'

4.6 Employees' Performance

A significant part of the literature (Cascio, 2000; Duxbury and Higgins, 2002; Baker et al., 2007; Mello, 2007) links WFH to employees' improvement of personal productivity. In line with these studies, the majority of the participants, when asked about their performance (questions 1.4.1: How do you find your overall performance as a result of working from home? and 1.4.2: How do you compare your home-based job with other jobs that you had when you were

working from the office?), stated that they performed better at home. In particular, out of the sample of 21 CRAs, only two (9.5 per cent) declared that they performed better when working from an office. Both respondents believed that their tasks could take longer to be completed at home whilst, sometimes, it was easier to get disrupted and harder to become motivated to start working. In particular, Leto, a new CRA, explained why she felt that she performed better when working in the office:

'I think I am less distracted [at the office], once I am on my desk [at the office] is all I have, no TV, radio and I don't have my mobile phone out in the office, where at home I can... all of that, it's more tempting'

In addition, Leto mentioned some communication and support problems when at home:

'... but I find, when I come to the office, I did get more done and [it] gives me a chance to speak to my line manager and resolve any issues I cannot do myself at home.'

It is important to mention that Leto is new to her role as a home-based CRA (she has only eight months' experience as a CRA) and has no previous experience of working from home autonomously. Her concerns are in line with those of other CRAs investigated in this research, who mentioned that they had difficulties when they were first introduced, without earlier experience of working remotely, to this home-based role. On the other hand, Clytemnestra, an SCRA who has worked from home in the past as a CRA, charged the responsibility of motivating the employee to the employer. She explained:

'Working from home..., I never had a problem motivational wise in terms of getting the work done, but I think that relies on your employer giving you enough work to do and the type of work you can do from home... requires you to be a good communicator. I felt it was fine working from home.'

Hephaistos was the second CRA who, despite experience in working as a CRA and also in working from home, found that his performance was better at the office. He suggested that it was a problem of efficiency and not performance.

He explained:

'I was more efficient when I was in the office, it takes me a while to get..., it is easier to... When you are at home, to do things, it takes longer to do tasks. I think the quality of work, it's similar.' [Hephaistos]

Generally, Hephaistos was one of the few CRAs who claimed to prefer working from the office and the main reason was that he felt isolated when working from home and missed his work colleagues. On the other hand, despite his preference for the office environment, he believed that the final quality of his work at home was not inferior to his work at the office.

From a performance perspective, the majority of the participants (19 out of 21 CRAs – 90.4 per cent) who claimed that it was better to work from home (questions 1.4.1 and 1.4.2) mentioned that they had less disruption; they could focus on tasks such as reviewing protocols or writing monitoring visit reports and generally they could concentrate better when they worked from the quiet environment of their residence. Athena said she had experience of working in an environment where it was difficult to concentrate. She clarified:

'I was working in an office, we were four colleagues in a small office and so, every time a phone was ringing, you were listening, even if you don't want, you were listening [to] the discussion, and also all my colleagues had some people coming to meet with them, so it was not very quiet to focus on things...' [Athena]

Generally, WFH is linked to tasks that need more intellectuality and focus, something which confirms the findings of Dutcher (2012) who links the telecommuting environment with the successful implementation of creative tasks. However, Garden was considered a better place for teamwork (Hestia)

and for clarifying minor details (Hera, Cleopatra, Medea and Hestia). Hera, a CRA, noted:

'I feel that working from home is more individual and I feel that [it] is easier for me to work in bigger projects, writing reports when I [am] really able to focus, but it's a bit more difficult with small things that you can discuss in the office so I think comparing the two, it's just different and I think it depends on what kind of tasks you have at your job.' [Hera]

Chronos, like Hera, found it difficult to compare WFH with working in the office.

He stated:

'It's [a] difficult question to answer because some things are much better at home, concentrating, getting things done, and I guess the less complex things may be more efficient in the office...'

However, by analysing the CRAs' everyday tasks, it is important to highlight that concentration and focus on detail are more common and desirable than teamwork and contact with line-management in their everyday workload. To be more precise, some of the activities described in Table 10 (for example, assisting sites with all aspects of study set-up, presenting protocols and procedures to initiate sites and maintaining communication with senior CRAs regarding study progress) may demand teamwork, but the majority of the activities (monitoring visits, reviewing protocols, writing reports, submitting applications etc.) of Table 10 can be described as tasks performed by CRAs who work in isolation. Furthermore, there was no evidence from the sample that phones and emails were not enough to cover those activities requiring team collaboration. Tufts Center for the Study of Drug Development Impact Report (2012) states the average time percentage that a CRA spends on different tasks: 41 per cent on monitoring visits at hospitals; 22 per cent on preparation for visits, monitoring data remotely, writing reports and following up on visits; 19 per cent on travelling; 13 per cent on administrative tasks; and five per cent on

training. The assumption is that, generally, CRA is a quite independent profession with minimum requirement for teamwork and that this is one important reason that makes it suitable for WFH. In particular, CRAs from the sample who work on non-commercial clinical trials (meaning less time for monitoring and travelling is needed but more time is spent on submitting ethics and R&D applications, on protocol amendments and on reviewing protocol) need significantly more time for using reading and writing skills than for communicating with managers and/or investigators.

Although only Thetis, an experienced CRA with seven years' experience of working in monitoring of clinical trials, six as a CRA, said she found that WFH could have a negative impact on the training process of an employee, it is worth mentioning that the association between training and WFH is something that has not been researched in this project and that needs further investigation. On the other hand, the use of TeamViewer, a type of software used by Olympus and available to download from the organisation's website, gives employees the opportunity to access other PCs, which may be very convenient in case of training. Indeed, when CRAs mention that the IT department can help them to solve IT problems on their laptops remotely, they refer to the use of this software.

Another factor in CRAs' performance is the longer working hours of a significant part of the sample (question 1.4.3: How do you find your working hours? Do you work after 17:00? Do you work on weekends? What time do you usually start working? How do you compare your working hours with the working hours of the office-based colleagues?). As described in the Literature Review chapter, WFH is usually associated with the spread of working-time schedules

(Alexander et al., 2010) or longer working hours (Dimitrova, 2003; Peters and Van der Lippe, 2007; Golden, 2008; O'Neill et al., 2009; Nätti et al., 2011) and this research confirms both these associations. In particular, 12 out of 21 (57.1 per cent) CRAs claimed that they worked regularly or occasionally more working hours than agreed, eight (38 per cent) said that they worked the normal hours of their contract and one CRA said she worked fewer hours than contracted (as her current portfolio of studies was not so demanding). Thetis reported that she worked at evenings or nights, Athena that she worked early in the morning and Iphigenia that she worked evenings as well as early in the morning. Eos noted that sometimes she worked on Saturdays when her husband was absent. The remaining 20 CRAs explained that they did not work at weekends. Four CRAs mentioned that they checked their Blackberries for emails early in the morning or in the evening, confirming Mustafa and Gold (2013) who suggest that sometimes it is difficult for teleworkers to switch off as they feel that they always have to be available. However, in the case of CRAs, there was no evidence that the management team put pressure on their employees for constant availability. Generally, as Thetis explained, the extra work was linked with the need to finish reports or answer urgent emails. To conclude, an important finding of this research, in addition to longer working hours, is the intensification of work: CRAs seem to be more dedicated when at home. On the other hand, although intense use of smartphones is associated with work-home interference, when employees are asked by their supervisors to stay online (Derks et al., 2015), and with burnout (Derks and Bakker, 2014), there is no evidence from this study that any member of the management team expected CRAs to stay connected after regular working hours. It is important to

highlight that, as mentioned earlier in Section 4.3.5, Eirene, the most experienced of the Senior CRAs, presented the situation where a CRA was '*consistently working much more later*' than the agreed seven hours as problematic.

Another significant benefit of WFH that this research has uncovered is the reduction in employees' absenteeism. To be more precise, 18 out of 21 CRAs (85.7 per cent) linked WFH with a decrease in absenteeism (question 1.4.5: Do you think that WFH influences absenteeism?). Demeter and Eos explained that they tended not to ask for sick leave for a minor condition (for example, colds or flu) as by avoiding commuting, they felt that they were still able to reply to emails and work on their laptops. Indeed, Medea, a CRA with five years' experience as a home-based employee, claimed that, as a result of less commuting, she felt that she was sick less frequently now that she worked from home than when she was working from a company's headquarters, partially confirming Overmyer (2011) who suggests that WFH offers continuity of work in cases of pandemics. However, absenteeism was researched by analysing secondary data as well. In particular, in 2013, 57 people worked for Garden as both home-based and office-based employees. Thus, a comparison is presented between these two groups with the focus on those who have full-time contracts with Garden and who have worked the entire year (12 months). Full-time employees are considered as those who have total annual leave of 24-27 days. From these 57 employees, 28 Garden employees fall into that category, whilst those who have spent part of 2013 on maternity leave have been excluded from the analysis. Of these 28 employees, nine home-based employees have 1.61 mean and one median day of annual sick leave, whilst the

19 office-based employees have 3.74 mean and three median days of annual sick leave, a significantly larger period of time; it seems that CRAs' perception that they tend to take less sick leave as a result of WFH is confirmed.

Continuity of work is also offered by WFH during adverse weather conditions (Olmsted and Smith, 1994; Duxbury and Higgins, 2002) and this research can confirm that Olympus's main website offers information regarding flexible work arrangements (mainly WFH) for office-based employees who want to work from home on an ad-hoc basis as a result of adverse weather conditions. For example, many of Garden's office-based employees chose to work from home on 28th October 2013 when south-east England was hit by strong storms. In addition, Mello (2007) suggests that WFH can protect from disruption from transport strikes and this research can confirm it. During London's Tube strikes of 29th and 30th April 2014, no CRAs reported work disruption and office-based employees also had the option to work from home those days, nullifying the strike's effect on Garden's normal workflow. The Olympic Games of 2012 was another period when Garden managed to have a regular workflow as office-based employees had the option to be based at home on those days that were expected to have high traffic. To conclude, both employees and organisations seem to benefit from WFH as it strengthens continuity of work.

Another performance topic is that of CRAs' internal communication with line managers and trial teams (question 1.4.6: Do you have any problems concerning your communication with the clinical-trial teams or the office; for example, irregular time callings?). In particular, 13 out of 21 CRAs (61.9 per cent) confirmed that they did not have a problem communicating with Garden's management and/or trial staff as a result of distance. Many of the remaining

eight CRAs suggested that sometimes it was better to be at Garden for clarifying minor things for which they would not bother to use their mobile to call staff at headquarters (mainly their line managers). On the other hand, as the majority of communication related to a clinical trial must be filed in the Trial Master File (TMF) for auditing purposes, oral communication is not considered as very professional and therefore email is the most common mode of communication. Hypnos, a CTA who provides administrative support at Garden, confirmed that the most common way to communicate with CRAs was via email (question 2.3: What kind of communication do you have [with CRAs]?). Generally, this research has not identified major problems among CRAs' communication linked to this remote working.

Theoretically, performance can be influenced by external factors such as other residents at home. Critical literature (Madsen, 2003; Peters and Van der Lippe, 2007; Youngah et al., 2011) suggests that spillovers and role conflicts can create problems for employees who work from home but this research does not confirm this. Indeed, 17 out of 21 CRAs (80.9 per cent) mentioned that they had no experience of facing problems from other members of their family or from friends during their work (question 1.4.7: Do you have any problems with other members of the family or friends when working, such as sharing rooms or disruptions?). On the other hand, CRAs stated that, generally, people that had no direct knowledge of their job characteristics and role very often did not realise that the CRA profession existed (question 1.4.8: Do you feel that sometimes people do not realise that you work when you are at home?). To give an example, Eros, in a humorous mood, satirised his neighbours:

'They think I live on benefits!'

Moreover, 19 out of 21 CRAs (90.4 per cent) have similar stories. For example, CRAs noted people who asked home-based CRAs whether they watched TV all day, friends who did not understand why CRAs needed childcare as they were at home, mothers of CRAs who considered WFH as a day off and friends who called and asked whether they could come round for a coffee and a chat. Beyond the comical tone of some of the stories, no evidence of linking outsiders' false perceptions about WFH to any kind of problematic performance has been unveiled by this research; there is no indication that such behaviour causes frustration or any other problem among homeworkers.

In line with CRAs' self-report (replies to question 1.4.1) about their performance and the secondary data about absenteeism, the management team found that WFH could improve employees' performance (question 4.16: How would you evaluate WFH concerning home-based employees' performance?). Eunomia, the Director, claimed that WFH could be beneficial:

'... if you got the right people; I think field-based people fit better.'

Eirene, an SCRA, found that, hypothetically, if CRAs were office-based, the outcome would be inferior as a result of colleagues talking to each other. She links a hypothetical obligation of CRAs to work from Garden to a possible increase in staff turnover and, as explained earlier, this is also confirmed by Garden's nine most experienced CRAs. Clytemnestra, an SCRA, believed that home-based employees could be more productive as they could focus more. She stated:

'... I think you probably get better sometimes from WFH because it's slightly more focused. The work is so independent; although they [CRAs] work as part of the team, you might have more than one CRA on the

same study, you are so responsible for your own sites and the management of your own work, whilst it can be sufficient to work in an office, you lose time commuting, you lose time chatting with people, you know, you lose time anywhere.' [Clytemnestra]

Artemisia, another SCRA, compared home-based employees with office-based employees and said that the performance of home-based workers was equal, or even superior, to that of their office-based counterparts. Artemisia also found that, as the job was evaluated according to outcome, weak performance could easily be detected. She stated:

'As I said, I think the majority of people who work at home are able to perform equally if not better than the office-based employees; I think generally you are able to evaluate performance based on output, so as long as it's evaluated regularly and early, you should be able to see when there is a problem with the performance of a home-based worker. And I think that sometimes some people are not able to work at home and therefore an office-based environment has to be made available to them to get to do their work [to the] standards [needed]...' [Artemisia]

She adds about herself:

'In fact, I probably say that I was potentially more productive at home than in the office.'

In a similar statement, Hypatia, the fourth SCRA, said she found that performance did not depend on the place of work but on the person's characteristics. She stated:

'I think that performance is not really related to where someone is based, to be honest. There are people struggling with their performance and they are struggling even when they are at the office. Sometimes it helps if they are here because they can be helped a bit more if needed and if they are willing to receive some help. It's difficult for someone that is new in the job to be home-based, but this [is] mainly because of lack of knowledge rather than performance-related, and if someone is not performing very well, probably, in our job, [they] need more guided monitoring visits to external sites rather than anything else.' [Hypatia]

In conclusion, overall CRAs' overall good performance is supported by both

CRAs and managers since they all link good performance with WFH. Table 19 summarises the most important findings of this research which verify this statement.

Table 19: Performance – Summary of findings

WFH is associated with CRAs' good performance because:
Only 9.5% of CRAs stated that they perform better in Garden than at home.
85.7% of CRAs linked WFH with a decrease in absenteeism.
61.9% of CRAs stated that they had no problem communicating with their managers and/or trial staff.
80.9% of CRAs confirmed that they had no problems that may negatively affect their performance as a result of the presence of family members and/or friends.
But:
57.1% of CRAs stated that they worked longer hours as a result of working from home.
90.4% of CRAs stated that friends and/or relatives (people outside their working reality) very often did not understand this mode of work, but there was no evidence that this produced a negative result for them.

The few communication difficulties mentioned above, as a result of lack of presence in the office, can be evaluated only as minor since overall communication is an extremely small part of their everyday job duties; visiting, travelling, writing and reading are the main job characteristics which demand the biggest part of their time schedule, leaving teamwork and direct supervision at the margin. The next section will focus on this lack of direct supervision and the general managerial particularities of the WFH mode.

4.7 'How do they know that you work?': a managerial perspective

The first reaction of people not involved in the WFH mode when they learn that somebody, particularly a non-freelancer, works from home is surprise and the

typical question that follows is: 'How do they know that you work?' Based on this classic query, this final part of the Data Analysis chapter focuses on traditional perceptions about distant working and how these can be obstacles to the good order of an organisation which operates in a demanding sector such as that of clinical trials. From a managerial perspective, this section analyses the 'world of pyjamas' and compares it with the mainstream 'world of suits'. However, before analysing the CRAs' beliefs about management and supervision, there is a need to start the analysis using the data that has been collected by the management team as their contribution to the overall working environment and the successful implementation of flexible work arrangements.

As mentioned earlier, Eunomia, the instigator of the WFH mode at Garden, claimed that the critical factors for the successful implementation of home-based CRAs were the correct recruitment and training for staff (question 4.4: How easy is it to manage CRAs who work from home? Any difficulties? What is the profile of a home-based worker?). She explained that the previous experience of working as a CRA was important evidence that a person could cope away from office premises without needing continuous support. Despite the fact that all CRAs mentioned that there was no particular training for what they were going to face (from the social and IT points of view) at home (question 1.4.4), Themis, the Quality Manager, mentioned that, in the beginning, new CRAs had the option to spend as much time as they wanted at Garden's premises until they felt confident about their knowledge and performance. Eunomia mentioned that WFH demanded a different mind-set and was only successful if the organisation did not have a culture that emphasised micro-management and controlling staff. She stated that she trusted staff *'and they*

give no reason not to trust', confirming the literature (Duxbury and Higgins, 2002; O'Neill et al., 2009) which links the non-visibility of WFH with trust, whilst characteristics of the job such as the level of autonomy are linked to morale and the latter to intrinsic motivation (Hackman and Oldham, 1975). On the other hand, she mentioned that people who are not visible sometimes felt that they were neglected and line managers should ensure that they were available to visit and support them. Dimitrova (2003) considers that traditional management stereotypes are a significant barrier to diffusion of WFH, but in the present research Garden is considered a modern entity. Although it was created through the collaboration of four large sovereign public bureaucratic organisations which operated in a different mind-set to each other and inside a more traditional structure, Garden seemed to be more progressive as it supported various forms of flexibility and modern ways of management. A significant part of the management team (Director, Quality Manager and the four SCRAs) described Garden as a modern and progressive organisation. At least, they found Garden more progressive than the four public 'umbrella' organisations which formed and sponsored Garden (question 4.6: Would you evaluate this organisation as flat-modern or bureaucratic-old fashioned?). The overall implementation of WFH inside a general bureaucratic framework is in line with the literature (Taskin and Edwards, 2007; Taskin, 2010) which claims that old-fashioned bureaucratic organisations and WFH can co-exist successfully. All managers of Garden claimed that they would encourage other organisations to adopt WFH, as from their experience, they found it beneficial (question 4.20: Would you advise a company to implement WFH plans or not and why?). Indeed, Ypatia claimed that WFH made people happy and happy

people were more committed, achieving reduced staff turnover, whilst Eirene suggested that WFH could be used to retain staff, particularly female staff with young children.

There was no evidence from the management team that they linked management with visibility, micro-management and surveillance. The Garden management's approach confirms the findings of Peters et al. (2010) who suggest that principles of Taylorism are not compatible with the pattern of WFH. As Noon et al. (2013) mentions, Taylor's principles of organising the work process are based on a specific managerial ideology which is based on the assumption about surveillance and control that:

'... people cannot be trusted to perform their jobs diligently, there needs to be control through close supervision and monitoring of all work activities'. (Noon et al., 2013: 142).

However, all of Garden's managers considered that, as long as the job was done, there was no reason to focus on monitoring people at work and this could be considered as evidence of trust. Despite the fact that there was no emphasis on micro-management, Themis, the Quality Manager, claimed that CRAs' performance could be seen via emails and telephone; she had feedback from line managers, investigators who work with CRAs and CRAs' reports with timetables of their monthly activity (metrics). In addition, all staff had to share calendars (particularly CRAs and their line managers) through their Microsoft Outlook account and thus they created another electronic trace of their presence since everything was transparent. As a consequence of Themis's approach to CRA performance, there is a need to examine whether micro-management techniques exist in Garden. The following Table 20 is an effort to

group together elements of the everyday work of a CRA, which may lead to the conclusion that tools of micro-management are available in Garden.

Table 20: Tools for Micro-Management

Application	Information which may be used for micro-managing CRAs
Metrics (CRAs' monthly report to line-managers)	Metrics include number of days used for visits to sites, written reports, protocol reviews, CRF design, protocol amendment, MHRA applications, training, administrative tasks, sick leave and travelling.
Monitoring patients' Case Report Forms (CRFs)	The software includes all patients' information relevant to the clinical trial that they are participating in. It contains audit-trail history where the date and time of CRAs' last saved data lock is recorded.
Reports after Monitoring Visits	A Report contains all information about a CRA's visit and all findings resulting from it; the report and the follow-up letter are uploaded to Garden's shared drive where the line manager will review them before sending them to the Site's Investigator.
Documents uploaded on Garden's Shared Drive	Date and time of uploading documents is available to all users (including the line managers); all documents related to a clinical trial need to be uploaded there.
Expenses claim sheet	Date and time of travelling is available to line managers through the attached rail tickets.
Training or seminar	Certificates which include the date of training are issued by the training team and filed on CRAs' personal training file.
Microsoft Outlook Share Calendar	All members (including CRAs) of Garden need to update and share their electronic Outlook Calendar. As a result, line managers know when CRAs have scheduled their monitoring visits or have meetings with investigators.
Emails	As explained in the Data Analysis chapter, an email (i.e. written information) is the preferable way of communication for all CRAs. Also, a large part of the communication recorded to all CRAs relevant to clinical-trial information is printed and filed inside each clinical trial's Trial Master File (TMF).

Despite the fact that she had access to CRAs' electronic calendars, Hypatia said she felt a little frustrated when she called a CRA or sent an email and received no answer (question 4.5: Is there any difference for you that you cannot physically see them? Is lack of visibility a problem or not?). However, she mentioned that there were cases where people who worked at Garden's premises, at the next desk, might also ignore her emails or send a late answer, meaning that the physical location of a colleague made no significant difference. Indeed, she mentioned that remote workers often replied quicker as they had to prove that they were working, confirming the research of Taskin and Edwards (2007) who claim that an overuse of emails can be a tactic which teleworkers adopt to demonstrate presence and availability to supervisors and colleagues.

Themis's overall perception of WFH was positive, but she thought that, despite the important role of WFH in Garden's success, managers could not work from home on a full-time basis; they had to be present to manage the office. In particular, she said:

'I think if the whole thing was virtual it would fall down, you can have a big box, think about a big box, and our structures are very flimsy but the corners are solid and I think if everybody was home-office based and didn't come together, the corners would disappear and the box, the structure of the box, would fall down.' [Themis]

Line managers also felt that they had to visit premises frequently and they could not be totally home-based (question 4.12: Do you think there is space for more WFH for other employees?). Eirene, the only home-based SCRA, visits premises one or two days per week to communicate with the Quality Manager, CRAs, CTAs and Investigators. In general, all CRAs and their line managers meet on a regular basis almost once every two months in a CRAs' meeting or a Quality meeting (this type of meeting also includes other members of Garden's

staff, such as the Systems Executive and/or the Trainers) where the emphasis is on organising training, communicating new policies and regulations, organising administrative work (for example, printing large documents such as medical protocols, monitoring-visit reports, correspondence which needs to be filed, or Serious Adverse Events Forms which need to be signed) and generally having face-to-face communication as a group.

A significant part of the analysis of the management of Garden focuses on the communication channels between CRAs and their managers. The term 'management' may have many different interpretations and can be analysed from different perspectives. Indeed, Boddy (2014: 10) defines management as:

'... the activity of getting things done with the aid of people and other resources...'

This '*aid*' in Boddy's (2014) definition is interpreted in this research as including a lot of communication. Considering that people and resources, as well as the output of '*things getting done*', are not significantly different as a result of changing CRAs' workplace, in this part of the Data analysis chapter the focus is on the communication channels needed. Both managers and CRAs expressed the belief that face-to-face communication was an important reason for visiting the office premises very often. This research explored the existence, if any, of alternative ways to replace, partially or even fully, the need for physical presence at Garden. Question 1.5.1 asked what kind of tools/ways CRAs used to communicate with all the stakeholders (managers, secretaries, investigators, trial nurses etc.). Question 1.5.2 asked whether CRAs used Skype or BB Messenger and question 4.10 asked what kind of methods managers used to communicate with CRAs, whilst question 4:11 asked whether managers could think of any other ways that they could implement communication with CRAs.

Indeed, employees have been asked whether they use additional IT channels, such as Blackberry Messenger or Skype, for their everyday communication. Despite the fact that Golden and Schoenleber (2014) recommend the use of video conferencing (for example, Skype) or synchronous communication channels (for example, instant messaging) as a way to enrich communication with teleworkers and thus increase their productivity, there is no evidence that employees use them in Garden. As no respondent declared that they used such alternative ways of communication, they were asked whether they would consider using Skype. The overall perception was that people, for different reasons, considered that Skype could not replace face-to-face communication. Even in cases of regular one-to-one meetings between CRAs and their line manager, which theoretically could be done virtually from home, most people thought Skype not appropriate for such contact. For example, Themis found Skype '*unnatural*', whilst the telephone was a more '*natural*' way of communication. She understood that Skype could be used as an alternative to the phone, but she found no reason to use it as a substitute for face-to-face contact. She was also afraid that the Investigators, who participated in the clinical trials, would not attend to e-meetings, whilst when they had face-to-face appointments, even with a slight delay, they always came. She felt that the Investigators would find it easier to ignore, postpone or forget an e-meeting than one that they had arranged to attend physically. Furthermore, she was not happy with a camera entering her private space, whilst for the same reason, Eirene, an SCRA, used the word '*intrusive*' to describe Skype. Another concern raised by Eunomia, the Director, was poor connectivity; the last time she used

Skype she had a bad connection and the sound was not synchronised with the speaker’s lips on screen, making clear communication difficult.

On the other hand, despite Eunomia’s past experience of having poor connection on Skype and Themis’s earlier claim that she lived in an area with slow broadband (see Section 4.5), Skype, according to its website, does not require a fast-speed line. As can be seen from the following Table 21 (Skype, 2015), a one-to-one video-conference requires only 300kbps (for both downloading and uploading speed) which is a speed that can easily be reached with today’s available broadband.

Table 21: How much bandwidth does Skype need?

(Skype, 2015)

Call type	Minimum download / upload speed	Recommended download / upload speed
Calling	30kbps / 30kbps	100kbps / 100kbps
Video calling / Screen sharing	128kbps / 128kbps	300kbps / 300kbps
Video calling (high-quality)	400kbps / 400kbps	500kbps / 500kbps
Video calling (HD)	1.2Mbps / 1.2Mbps	1.5Mbps / 1.5Mbps
Group video (3 people)	512kbps / 128kbps	2Mbps / 512kbps
Group video (5 people)	2Mbps / 128kbps	4Mbps / 512kbps
Group video (7+ people)	4Mbps / 128kbps	8Mbps / 512kbps

Clytemnestra found that Skype could be added as an option in cases where it was hard to gather many people at the same place and time, but felt that it

should not be a substitute for personal contact. Artemisia also thought that Skype was a kind of telephone, whilst CRAs' visits to Garden offered the opportunity to 'expose' people to the organisational environment. Indeed, she mentioned:

'The value of bringing someone into the office, although you can see kind of expressions and personal interactions over Skype, it's not the same as being in the office, and also bringing people into the office, it doesn't just expose them to you as a line manager but it exposes them to the greater office. The idea of them coming in and sitting for a day, it's not to see me as a line manager for an hour, it's to do with them, being around and observing kind of the atmosphere of the office and the various things. They also go to meetings, meetings with people that aren't in their day-to-day line management or working connections; you can't [do] these on Skype.' [Artemisia]

It was not only the management team that found Skype awkward; many CRAs also saw it from a negative perspective. Chronos found that he would have to dress up at home, maybe even wear a tie, for a tele-meeting with his supervisor or an Investigator and therefore he could not understand the reason for using Skype. Aspasia preferred to use emails, to write down things instead of using oral communication, whilst Artemis found that talking through Skype was not the same as sitting next to another person. Eros had a positive attitude towards Skype. However, he did not consider it a proper substitute for face-to-face meetings but rather a useful additional communication tool, whilst Iphigenia found that Skype could be disruptive in an office environment. Only three CRAs (Gaia, Hephaistos and Demeter) (14.2 per cent) said that they would not have a problem using Skype without making a negative comment about it or mentioning that Skype could not replace other ways of communication (for example, face-to-face). Generally, all the CRAs used emails and sometimes phones for communication; as clinical trials belong to a much regulated sector, emails are used to record processes and guidelines and to safeguard

approvals. In particular, when CRAs were asked about the tools of communication that they used (Question 1.5.1: What kind of tools/ways do you use to communicate with all stakeholders?), 21 out of 21 (100 per cent) declared that they used emails and 19 out of 21 (90.4 per cent) that they may use a mobile phone. Moreover, three out of 21 CRAs (14.2 per cent) mentioned that they may also use face-to-face contact as a communication tool. All CRAs declared that their preferred way of communication was email, confirming the findings of Lai and Burchell (2008) who suggest that the Directors in their study (four Directors are their sample) prefer to use emails for communication. In addition, three out of 21 (14.2 per cent) CRAs claimed that they used emails to record what had been agreed. Leto believes that, sometimes, sending an email was better than face-to-face communication for clarifying queries (question 1.5.6: Are there things that you would like to clarify but you do not because you are not there? How do you manage all these things?). She stated:

'Oh, no, everything is clear. Sometimes it works the other way around, if I am in the office and I approach someone and I don't have the answer, it may work the other way around; where if I am at home, an email can be better for clarification.' [Leto]

Danais, an experienced CRA, explained why she preferred emails to using phones:

'... just because the mobile signal, maybe, it's quite bad. So, I find [it] easier, maybe the message is lost in the translation, or they don't give a copy, I just find it easier to send an email...'

For similar reasons, Aphrodite, another CRA, stated:

'I like email because of the fact you know what has been said...'

Cleopatra described why she preferred emails whilst giving a clear picture of her overall communication approach. She stated:

'... I prefer the same [communication tools] as when I am in the office, I prefer emails because of the reason that everything is written instead of telephone conversations. But sometimes, I would say 80 per cent of the times email, 20 per cent of the times telephone, with the sites. With my team in Garden, with my manager [name of her manager], I had, like, fortnightly, so every two weeks, and with the rest of the team when I was in the office, or by email I think. I am not a person of telephone; I prefer face-to-face or otherwise writing.' [Cleopatra]

Cleopatra's explanation is very important as she declared that she preferred writing down everything on an email without linking her decision with the place of work (home or office). It seems that CRAs want to have written evidence of what has been asked and/or agreed, confirming O'Kane and Hargie (2007) who claim that often employees often send emails in an effort to cover themselves. Hypatia, a Senior CRA, highlighted another aspect of communicating from home. She declared that she preferred to talk over the phone with her subordinates when working from home as otherwise everyone at Garden could hear her. It is important to highlight that privacy cannot be considered as granted at Garden as all staff (except Eunomia and Themis who have their own offices) share the same space. Hence, listening to a colleague talking over the phone at the next office desk is not something unusual.

As explained earlier, although communication is always an important factor in a business environment, CRAs do not spend a large part of their workload on it. The most frequent answer (mode), which was given by seven CRAs (33.3 per cent), regarding how often they visited the office premises (question 1.5.3) was *'every two weeks'*, whilst generally answers varied from *'once every week'* to *'once every three months'*. Moreover, one CRA, Medea, claimed that she contacted her line manager (for one-to-one communication) once every two weeks, but the contact was by phone. On the other hand, there was a more regular (from a daily basis to once a week) electronic communication (mainly

through emails) with line managers and clinical-trials teams (at this point, it is worth mentioning that, after a monitoring visit, what should follow is a report to the line manager and a follow-up letter to Site's Principal Investigator, stating the action to be taken). For cases where different CRAs are working on the same trial, they have the option of ask for help from a colleague, but again, this is not something that is very common (question 1.5.7: Do you communicate with other colleagues to clarify any issues you may have and/or ask for help?). Table 22 includes the replies and the frequency of communication between CRAs.

Table 22: Frequency of communication between CRAs

I communicate with other CRAs:	Frequency of answer:
Once every 3 or 6 months	1
Once every two months	1
Once a month	1
Twice a month	2
Once or twice a month	1
Once a week	2
Once or twice every week	1
Every day	2
As needed	3
Never as home-based CRA (contacted CRAs only when undergoing office-based training period)	1
When at office	1
Not mentioned	5

It is obvious that, for many CRAs, communication between them is not very frequent. For example, six CRAs (28.5 per cent) mentioned that they communicated with each other fortnightly or less frequently.

In conclusion, communication (physical or through the phone) and teamwork cannot be perceived as important characteristics of the CRA profession and thus cannot be considered as a reason for abolishing WFH policies.

Another topic investigated was the 'news' that CRAs may potentially miss as a result of their absence from headquarters. Generally, CRAs felt that they missed an important part of the organisational 'news' as a result of their physical absence from Garden. In particular, 20 out of 21 CRAs (95.2 per cent) claimed that they missed Garden's 'news' as a result of WFH (question 1.5.9: Do you feel that you lose any part of the 'news' of the organisation because of your absence from the premises?). However the nine CRAs who clarified the kind of news that they missed made it clear that they missed gossip and the social part of the office. On the other hand, concerning the professional part of their job, there was no evidence that they missed any important information concerning their work. Athena gave a clear picture of what home-based CRAs could miss. She stated:

'No, again, the important information, you always have it by emails or your line manager. Maybe you are losing a bit of office life and what's going on between colleagues and something like that, which actually I don't miss that because it's time consuming for nothing.'

Despite the remote mode of work, and in contrary to findings from Sardeshmukh et al. (2012), who associate telework with lack of feedback and support, CRAs can always ask for help when they need it, whilst most of them

keep their minor queries on a piece of paper to ask their managers during their visits to the office premises. As Chronos said:

'If there was something urgent, you could always ring Themis [Quality Manager], or even a Senior CRA; there is always somebody available, and if less urgent, generally it probably can wait until the next day at the office, otherwise I would try to resolve it on [the] phone or something like that.'

The final topic investigated in this section in regard to management and supervision is CRAs' career progression (question 1.5.8: Do you feel that employees who work from home are sometimes neglected in promotion opportunities or not?). Contrary to the research of Kelliher and Anderson (2008) and Church (2015), who claim that visibility is a concern that remote workers consider important when on the way to promotion, physical absence from Garden was not considered a factor that could negatively influence future career development inside the organisation. To be more specific, only two out of 21 (9.5 per cent) CRAs expressed some concerns about this and linked absence with a difficulty in getting promoted. CRAs felt that, even though they were not physically present, their professional presence was obvious through their work. Indeed, one of the four Senior CRAs interviewed was promoted from home-based CRA. Another Senior CRA was also promoted from CRA but she always preferred to work from the office rather than at home. Generally, as Themis, the Quality Manager, claimed, all CRAs had the option to work from the office when they felt like it. Another argument for claiming that CRAs' physical absence did not harm their promotion hopes was that, during the two years following the period at which the interviews with the CRAs took place (the first six months of 2014), two of the sample's home-based CRAs were promoted to SCRAAs.

To summarise, the findings of this section indicated that the successful implementation of WFH was linked with the need to create an environment of trust and a progressive mind-set. Both CRAs and managers said that, in an ideal working environment, both sides needed to know – and seemed to know in this case – their roles and duties. Direct surveillance, like most of the general principles of Taylorism, had no place in the CRAs' way of working even though there is evidence from the literature that implementation of telework and bureaucratic organisations can co-exist (Taskin and Edwards, 2007; Taskin, 2010). Although the proper tools and technology to micro-manage people exist, managers claimed that they preferred to judge staff on their results and their overall performance. On the other hand, the Quality Manager said she believed in a hybrid model of work for all managers as she perceived their presence in the office to be crucial. Another critical finding was the overall reluctance to use, and sometimes the negative attitude towards, Skype. For different reasons, the majority of the sample found that Skype could not be a substitute either for the telephone or for face-to-face communication. Generally, CRAs' physical presence in the office was not perceived as important and/or necessary whilst there was no evidence that the overall communication with managers was inferior because of their long-distance collaboration.

4.8 Conclusion

The Data Analysis chapter tried to combine the current research's findings with a wide range of WFH literature. Words and numbers, narratives and tables and

primary and secondary data have been used to describe the phenomenon and to show the scope of the everyday working environment of Garden. This research focused on people who work in a demanding sector such as clinical trials and how they tried to combine career progression with work-life balance. Based on the research question and the five research sub-questions, the analysis of the data collected covered a great range of the WFH literature, whilst the first topic explored was the homeworkers' WLB.

Garden's remote employees made it clear that they were happy to work from home as this mode of work improved their work-life balance. CRAs confirmed that WFH gave them the opportunity to find more time for leisure activities and for organising their lives in a better way. They declared that it helped them with childcare and their overall family obligations, whilst there was evidence that WFH could be of valuable assistance in allowing employees to care for elderly or ill people. On the other hand, working from home as a different way of working could make employees feel isolated and lonely. Training and a good knowledge of the profession's characteristics were proved to be two important factors needed to safeguard a 'smoother' fit for the employees when they were introduced to their new remote workplace environment. The next important sub-question that this chapter covered was the relation between cost reduction and WFH as there was a need to find out whether there was any financial benefit for both employers and employees in using WFH as a model of work.

CRAs were proved to save money by working away from commercialised London and, in so doing, helping their organisation to be more competitive by preserving a leaner budget. To start with organisational costs, keeping employees away from the central offices proved beneficial in reducing the

overall workplace costs. In particular, Garden managed to hire and retain high-quality employees by offering flexibility of space. In a very competitive working environment, such as that of clinical trials, Garden managed to attract employees from the private sector without offering a significantly better reward package than that of well-established competitors such as pharmaceutical companies and CROs. In addition, Garden achieved a reduction in overall overheads by avoiding maintaining more than 15 CRAs at the London premises on an everyday basis. However, it was not only the organisation that benefited from this mode of work; CRAs stated that WFH had made an important contribution to their family budgets with the emphasis on decreasing the costs associated with commuting, childcare, clothes, food and beverages etc. The next topic investigated was the relation between WFH and ICT.

CRAs work from home because ICT innovations permit them to do so with the main technological tools used by CRAs being their laptop and smartphone. The overall findings confirmed the perception that existing technology was enough to permit employees to work from a distant place away from central organisational premises. Even though CRAs faced IT difficulties, these difficulties did not seem to create significant problems in their overall duties and everyday tasks. On the other hand, CRAs highlighted the fact that ergonomics could be a problematic part of their everyday working lives, which needs further attention and action from the employer's side. The next important sub-question investigated in this research was the overall performance of the CRAs as a result of working remotely.

This research indicated that there was no evidence that WFH may have a negative influence on CRAs' performance. Indeed, the significant majority of

CRAs declared that they performed better when at home than when working from the office. CRAs confirmed that WFH could be a very helpful tool to reduce absenteeism, whilst the presence and different roles of other members of the family inside the house could not be considered as a significant disruption to their overall performance. The most important drawback among the findings of this fourth research sub-question was that a significant part of the participants stated that WFH may lead to longer working hours and intensification of work. The fifth and final part of the Data Analysis chapter focused on the managerial perspective of the phenomenon.

The managers made it clear that there were many other ways to evaluate an employee, making Taylor's principles of management and traditional direct surveillance rules seem old-fashioned and outdated. The management team believed that CRAs' performance could be seen through their everyday work, abolishing the need to micro-manage them. Although there was technology which could use remote micro-management, the management team preferred not to build the organisational managerial mind-set on direct supervision but to show trust in employees, and as Eunomia, the Director of Garden, stated, '*they give no reason not to trust [them]*'.

The following table summarises and categorises the most important findings of all five topics analysed in the Data Analysis chapter. It is an effort to quantify the most important findings which will be combined with the Literature Review chapter sections to produce the overall discussion and conclusions of this research. Therefore the next chapter is the discussion produced after analysing all the data generated.

Table 23: The Most Important Findings of All Five Research Sub-Questions

<p align="center">Work Life Balance</p>	<p>61.9% of CRAs prefer to work from home than at the office. 23.8% are neutral concerning their preferable place of work. 14.2% prefer to work from Garden’s premises.</p> <p>100% of CRAs find WFH convenient with domestic jobs.</p> <p>57.1% of CRAs claim that WFH can solve problems of their everyday life.</p> <p>100% of the CRAs find WFH helpful with childcare.</p> <p>95% of the CRAs (sample of 20) feel that they have a good WLB.</p> <p>50% (the most experienced part of the sample) of the CRAs (sample of 18) would consider leaving Garden if they had to work from the main premises.</p>
<p align="center">Cost Reduction</p>	<p>95.2 % of the CRAs believe that the lack of space and/or the nature of the work was the main reason that Garden introduced WFH policies (61.9% of the CRAs mentioned the nature of the work and 52.3% the lack of space).</p> <p>100% of CRAs can name an expense which is reduced because of WFH with the majority of them identifying reduced commuting expenses.</p> <p>66.6% of CRAs stated that WFH may result in an increase in their gas and/or electricity bills.</p> <p>The mean time for a CRA to visit Garden from home (single trip) is 1 hour and 12 minutes and the median is 1 hour and 10 minutes.</p>
<p align="center">ICTs Factor</p>	<p>52.3% of CRAs prefer to work from a PC rather than a laptop.</p> <p>95.2% of CRAs can remember at least one case where they had to face an IT issue such as losing access to the organisational share drive or updating software.</p>

	<p>100% of CRAs complain that they do not have administrative rights to download or update software at home.</p>
Performance	<p>Only 9.5% of CRAs say that they perform better in Garden than at home.</p> <p>85.7% of CRAs link WFH with a decrease in absenteeism.</p> <p>61.9% of CRAs state that they have no problem communicating with their managers and/or trials staff.</p> <p>80.9% of CRAs confirm that they have no problems which may negatively affect their performance as a result of the presence of family members and/or friends.</p> <p>57.1% of CRAs state that they work longer hours as a result of working from home.</p> <p>90.4% of CRAs state that friends and/or relatives (people outside their working reality) very often do not understand this mode of work but there is no evidence that there is a negative result for them from this.</p>
Management & Supervision	<p>100% of CRAs use emails and 90.4% may use the phone for communicating with managers, colleagues, CTAs, investigators etc.</p> <p>14.2% of CRAs may use face-to-face contact as a communication tool.</p> <p>Only 9.5% of CRAs link WFH and absence from premises with a difficulty in getting promoted.</p>

CHAPTER 5

5.0 Discussion

This chapter provides a comprehensive and detailed discussion of the analysis of the findings of this research study, as presented in chapters 2 and 4. It will critically evaluate the reality of the work of the home-based CRAs who work for a research-led, but traditionally old-fashioned, academic employer. The discussion chapter works as a mill which 'grinds' theories, concepts and empirical research to create a refined output which is significant for social science. It outlines critical concepts of WFH and empirical data from the case study of Garden, linking the views on the advantages and disadvantages of WFH for the CRAs. In particular, one of the most important contributions of this research is the fact that it is the first time in academic research that an in-depth case study focuses on the significant occupation of the CRA.

The discussion starts with analysis of the five research sub-questions set out in Table 1 in Chapter 1 in an effort to evaluate the WFH mode of work in Garden through the occupation of CRA; all questions are analysed in relation to the literature presented in Chapter 2 with the first topic being the work-life balance of the examined participants.

5.1 Research Sub-question 1: Are CRAs Happy to Work from Home?

The starting-point of any effort to promote WFH as a model of work is the fact that 95 per cent of CRAs in Garden explicitly stated that they were happy with their work-life balance (WLB). This research complements earlier research (for example, Vermaas and Bongers, 2007; Collins, 2005; Redman et al., 2009;

Maruyama et al., 2009), confirming the association between WFH and good WLB. This research highlights the fact that the CRAs who work from home are satisfied with their WLB, whilst it challenges earlier research which links WFH with various types of work-family conflicts (Duxbury and Higgins, 2002; Vittersø et al., 2003; Sullivan, 2000; Felstead et al., 2005; Greenhill and Wilson, 2006). The first research sub-question, which focused on the question 'Are you happy to work from home?', was clearly answered: yes, CRAs declared that they were happy to work from home. However, it is not only the declaration of good WLB that leads to the assumption that CRAs are happy. In addition to 95 per cent of CRAs who stated that they were happy with their WLB, 61.9 per cent of Garden's CRAs declared that they preferred to work from home than at the office and 100 per cent confirmed earlier research which found WFH convenient with childcare (Vermaas and Bongers, 2007; Maruyama and Tietze, 2012) and domestic jobs (Tietze et al., 2009). It was also highlighted that 57.1 per cent of CRAs found WFH helpful for combining other tasks outside work and 50 per cent declared that they would abandon Garden if they had to work from the office. Indeed, the most experienced group of CRAs claimed that a change in organisational policy which would lead to their compulsory return to headquarters would make them consider changing employer. This final finding concerning CRAs who would consider leaving Garden if they had to work from the office is one of the most important findings of the research. The current research is the second research study after Tietze and Nadin's (2011) which is also based on a qualitative case study of a public organisation in the UK, which confirms that withdrawing homeworking can lead employees to leave the

organisation. This finding is important for any policymaker or HR department seeking to change existing WFH policies.

It is important to have a parenthesis here to highlight the fact that, according to *Hygiene theory* (Herzberg, 1968), there are factors (*hygiene factors*) that are linked only to the dissatisfaction of employees, whilst they do not add to their overall satisfaction. Such factors may be working conditions, interpersonal relationships, company and policy administration, job security and salary (Hollyforde and Whiddett, 2002) and changing workplace (one type of working conditions) which, by theoretically forcing employees to work from Garden's headquarters, may lead to Herzberg's (1968) kind of dissatisfaction. It is important to highlight that, at the moment, WFH is considered by Garden's CRAs as granted, as the privilege to work from home is in their job description. One consequence of changing WFH as a norm may be to affect the perceived work-life balance of the CRAs and lead to, as described by Herzberg (1968), dissatisfaction at work.

Although declarations about happiness and good quality of life involve a significant degree of subjectivity, they are significant enough to be accepted as strong evidence of employees' high level of work-life balance. To clarify, it is important to highlight that a significant part of the research is based on subjective realities expressed by CRAs at a specific point in their lives. In particular, many of the questions about quality of life and WLB, as well as the ones that are analysed later on concerning performance, are answered in qualitative data rather than numerical data. Generally, the rationale behind the data analysis used in the Data Analysis chapter was to use a quantitative analysis of qualitative data where replies can be grouped to produce tables and

percentages. On the other hand, there are no numbers and/or tables to describe Hestia's complaints about previous bad working environments, Hera's description about modern remote IT departments and Eros's personal experience of WFH when his wife was dying and he had to continue with his duties. A significant part of these findings are viewpoints as perceived by the participants of this research. To give an example, for another researcher, a description of the 'balanced' life of a CRA, a mother of three children, may be the definition of lack of space at home or role conflicts in the family. However, as stated earlier, the researcher perceives the CRAs' overall positive feedback about their quality of life presented in Section 4.3.1 as significant evidence to support the contention that WFH has a significant contribution to their quality of life. After all, if the majority of CRAs claim that they are happy with their reality of work, we do not have reasons not to believe them.

In addition to overall happiness and good quality of life, other aspects of the WLB factor explored in this research were childcare and domestic tasks. In both cases, every CRA from the sample declared that WFH could be helpful when it came to childcare and domestic tasks. In particular, as the significant majority of participants were women – and traditionally women are more likely to be involved in domestic jobs (Mirchandani, 2000) and childcare since childcare is, for women, a significant motivation to work from home (Felstead et al., 1996; Felstead et al., 2001; Mirchandani, 2000; Wheatley, 2012) – there is confirmation from all CRAs that WFH offers significant help with family obligations. On the other hand, as mentioned earlier in the Literature Review chapter, a significant critical part of the literature focuses on exactly this fact, where this model of work has not changed gender roles in the family (Hilbrecht

et al., 2008; Hilbrecht et al., 2013), or as with all flexible work arrangements, it failed to introduce equity to those who live in a patriarchal environment (Hilbrecht et al., 2008; Sullivan and Smithson, 2007; Sullivan and Lewis, 2001). In line with this criticism, this research does not claim that there is evidence from CRAs that WFH has changed the traditional gender roles inside the family. Indeed, Hephaistos, a father of three children, claimed that he worked upstairs at his office, leaving childcare responsibilities exclusively to his wife; Gaia declared that her husband was happy to find a meal when he returned home as she worked from home and could cook; Hestia admitted that her husband expected her to do all the domestic jobs as she worked from home. Generally, this research shows that it is rather difficult to claim that a change in the mode and/or place of work – home or office – plays a significant role in the change of gender roles inside a family. Indeed, the case of Garden demonstrates that domestic responsibilities are still performed mainly by women CRAs. It is important to highlight that Hofstede's (1994) classic work describes British society and the workplace as individualistic and masculine and there is no evidence, at least not from Garden's case, that this can change as a result of changing the place of work.

As will be discussed later on, when there will be an interpretation of trade unions' concerns, the advanced development of ICT has managed to bring all employees 'closer' at the same time, whilst reducing the need for physical presence. This research has demonstrated that there are employees, mainly women, who play a significant role in the overall process of new drug development and at the same time declare that they are happy with their personal lives and that WFH has played a significant role in this fact. On the

other hand, it is important to highlight again that the research findings are based on UK-based employees who are professionals in the field of clinical trials and holders of higher-education qualifications. Therefore, many of the traditional concerns that developing countries have about WFH [i.e. exploitation in terms of hours of work and/or child labour, poor health and safety conditions and concerns about insurance, pensions, holidays and the ability to join a union (Tipple, 2006), or gender roles inside a traditional patriarchal family (Sarioğlu, 2013)], may not apply in the research findings at Garden.

Another important factor of work-life balance identified in this research was the benefit that WFH may offer in cases where employees care for elderly and/or ill people. It was emotional and shocking to record Eros describing that his wife was dying but he had the opportunity to be there, next to her, most of the time, because of WFH. Although there were only three CRAs, Eros, Hestia and Medea, who mentioned that they had disabled, ill or elderly people to care for, their statements were very important. They reminded the reader of the number of people who have to work and also care for somebody else who may be in poor health. In addition, although there were no disabled CRAs in the sample and therefore no examination of any type of disabled employees, WFH may be considered a model of work which may help people with mobility needs. The fact that, in 2012, 16 per cent of the total workforce in the UK were classified as disabled (UK Government, 2014a) indicates that seeking alternative workplaces may be an important theme needing further research.

Another significant problem highlighted by the participants in this research was the isolation that many of the CRAs claimed that they felt when working alone at home. As the literature suggests (Davenport and Pearlson, 1998; Lai and

Burchell, 2008), home-based employees need to search for interests outside the office and home to face the social isolation that WFH creates. Indeed, many of the phrases used by CRAs to claim a good quality of life and presented in Section 4.3.1 may be a response to this problem. For example, Artemis's '*Pilates on Wednesday*', Chronos's shopping, Medea's preparation of '*a good lunch*', Gaia's visiting the gym, Demeter's enrolment at the photography club and Penelope's hobbies all offer a significant help for CRAs who need to socialise and break their everyday routine. These findings are also very important as they may offer a response to the social isolation which is one of the most well-recorded drawbacks described in the WFH literature (Duxbury and Higgins, 2002; Wilks and Billsberry, 2007; Valsecchi, 2006; Whittle and Mueller, 2009; Lai and Burchell, 2008; McNaughton et al., 2014; Vermaas and Bongers, 2007).

In conclusion, Garden's CRAs clarified that they were happy with the status of their WLB. WFH proved to be very helpful with aspects of everyday life, mainly childcare and domestic jobs. The next research sub-question that needs to be discussed is the cost reduction that WFH offers to CRAs and to Garden.

5.2 Research Sub-question 2: Is WFH economically beneficial for both Garden and CRAs?

The second research sub-question discussed in this chapter is the economic benefits for Garden and CRAs as a consequence of WFH. Cost reduction was one of the very first topics in telework/telecommuting literature. In particular, as mentioned earlier, Nilles (1975), the father of telecommuting research, was the

first to mention the influence of telecommuting on people's and organisations' budgets. In his influential work about the decentralisation of organisations, he mentioned the importance for organisations to face *'the increasing cost of transportation in urban areas'* (Nilles, 1975: 1,143). Thus, cost reduction is an old and well-established topic of telework literature and this research aimed to give a contemporary view on this topic.

To start with the employer's side, one of the main contributions of the current research is that it focuses on an organisation which operates in a highly commercialised area, London's city centre. Although a significant part of the management team (excluding Eunomia, the Director) has not realised, or has never estimated, the actual cost benefit of maintaining more than 15 CRAs away from the headquarters in London, their statements made it clear to the researcher that the financial benefit for the organisation was very significant. This research complements older research which associated the implementation of telework with organisations' various types of cost reduction (Oettinger, 2011; Kurland and Bailey, 1999; Skyrme, 1994; Hilbrecht et al., 2013; Pyöriä, 2011; Duxbury and Higgins, 2002). Although it is not the first time that research has focused on the link between WFH and the financial benefit for the organisation's budget, it is the first time that a study has examined a traditional public academic institution in the UK that implements WFH policies. It is the first time that a University and three NHS Trusts have created a large clinical-trial unit to organise clinical trials, copying human-resource infrastructure from the private sector, and this research evaluates this effort. From the analysis of the Data Analysis chapter, it became clear that WFH saved Garden both space cost (rent) and general overheads associated with maintaining

offices in London. However, the most significant benefit identified concerning cost reduction was not the obvious reduction of the direct cost associated with employing people and the resources required in the centre of London but the opportunity to attract and retain high-quality professionals from the very competitive pharmaceutical and clinical-research sector. In particular, this benefit helped Garden to enlarge the geographical recruitment pool of candidates, confirming Thompson and Aspinwall (2009). To be more specific, Garden managed to recruit and retain eight CRAs living outside the M25 motorway (effectively the circular border of London). WFH helped a new organisation such as Garden, which did not have the budget to offer bonuses, company cars and private insurance, to be competitive in the demanding labour market of the clinical-trials sector, confirming the findings of Brodt and Verburg (2007) who link mobile work environments with an improvement in overall organisational competitiveness. Garden, an organisation which, as described by Eunomia, the Director, struggles to attract and retain CRAs, mainly because of a strict financial budget, used the flexibility of space as a method to increase competitiveness and gain economic advantage.

Concerning the CRAs' side, Garden's employees declared that they found a significant improvement in their personal budget because of WFH. In particular, as mentioned in the Data Analysis chapter, 100 per cent of CRAs linked WFH with the reduction of at least one personal expense, mainly childcare and commuting expenses. When one hour and 12 minutes is the average time of a single trip from home to London for Garden's CRAs, saving the cost of this rail ticket is a significant assistance in employees' family budget. In addition, WFH offers to CRAs another two hours and 24 minutes to work, on a daily basis,

which arguably benefits both the employer and employee. As explained in the Data Analysis chapter, WFH was proved to offer significant assistance to CRAs' family budgets.

Generally, concerning the financial benefits that WFH can offer to Garden and CRAs, the most important contribution that the current research has made to the existing literature is the current economic environment in which companies and people work and which is known as 'austerity'. Although the findings of this research about cost reductions are similar to previous findings from other researchers [for example Duxbury and Higgins, 2002; Vermaas and Bongers, 2007; Hilbrecht et al., 2013 about reducing commuting costs; Felstead et al. (1996) about reducing childcare costs; Duxbury and Higgins (2002) about reducing clothing and food costs; Skyrme (1994), Kurland and Bailey (1999), Jaakson and Kallaste (2010), Hilbrecht et al. (2013), Schmidt and Duenas (2002) and Pyöriä (2011) about reducing company's overhead costs; Jaakson and Kallaste (2010) and Schmidt and Duenas (2002) about reducing recruitment and retention costs], it is the current difficult economic climate which changes the significance of the findings concerning the financial benefits of WFH. It is the challenging global financial environment, as described in the Literature Review chapter by critical economists such as Stiglitz (2015), Krugman et al. (2013) and Piketty (2014), or the expanding commuting (Nair, 2015) and childcare (Rogers, 2012; Rutter, 2015) costs in the UK (particularly in London), which make the findings about cost reduction important. As highlighted in the Literature review chapter, austerity economics is the core school of thought on both sides of the Atlantic Ocean (i.e. in the USA and Europe) (Pollin, 2013) and this is important when we try to understand the

contemporary significance that cutting expenses has on both organisations and employees.

It is important to remind the reader that the CRAs are public servants paid by one academic institution and three NHS Trusts and that all these four organisations have to operate in a very stringent financial environment. As a consequence, the CRA profession will be compared with another much more well-established profession in the health sector. The nurses which are a heavily unionised profession, as their trade union (Royal College of Nursing) is the fourth largest (behind Unite, Unison and GMB) (data for 2012) in the UK, with more than 415,000 members (Williams, 2014), are currently (2015) rewarded with an annual salary of £31,072 (Band 7) (Royal College of Nursing, 2015b) and thus their income can be compared with the salary of CRAs. According to the hypothetical scenario presented in the Data Analysis chapter, Danais joined Garden as a CRA, where the starting salary was £32,277, and as a result of this, she managed to save £5,000 in rail travel costs per annum. The 15.49 per cent ($\frac{£5,000}{£32,277}=15.49\%$) increase that she hypothetically gained when she changed employer (we take the scenario that an employee changes employer only because of commuting expenses coverage) is a significant increase in her salary. The Band 7 NHS nurse mentioned earlier, despite their heavily unionised profession and the theoretical intention of the government to improve terms and conditions, has earned an increase of 6.8 per cent, less than half of Danais's increase, since 2008-09, the start of the financial crisis (Royal College of Nursing, 2015a). The comparison with other professions in UK public services, such as nursing, and the general link to the current challenging financial environment are included in the Discussion chapter in an effort to

highlight the difference between previous economically fruitful eras such as Jenkins's (2012) era of '*welfare state*' and today's laconic reality. It is obvious that, in the case of CRAs, WFH offered an important improvement in terms and conditions that no government's goodwill could offer. The 2-3 per cent increase in the pay scale of a CRA in the sample is obviously significantly less beneficial than the decrease in their expenses that this pattern of remote work introduced. It is very hard for any government, public academic institution or NHS Trust, under the current economic circumstances and austerity-led budgetary restrictions, to cover Danais's massive commuting expenses, Penelope's additional eight hours per week of childcare that she now saves as a result of WFH and Thetis's daily £15 for a drop-off and pick-up of her child from the nursery, which are all clear reductions in expenses.

It is obvious that, since Nilles (1975), the benefit of cost reduction that telecommuting offers has always been on the agenda of social scientists and policymakers. However, the current economic circumstances increase the significance of all findings related to cost reduction for both employees and organisations. The following section will focus on the third research sub-question, the evaluation of the existing technology used in WFH.

5.3 Research Sub-Question 3: Is There Sufficient Technology to Support the Virtual Office?

The third topic discussed in this chapter is the technological factor. As explained in Section 1.2 of the Introduction chapter, neither the researcher nor the CRAs can be considered as IT experts. From the 29 employees interviewed, only

Poseidon, the Trials System Executive, may be considered a person who has deeper knowledge of technological issues. As a result of this limitation, the researcher started the investigation of the technological part of the research with one main aim: to examine, from a technological perspective, whether the virtual office can operate smoothly. In other words, the research examined whether the existing technology can efficiently support the operation of remote working. The significance of the results of this research sub-question rests on the fact that this research is one of the very rare cases that a social scientist has focused on technological aspects and their association with WFH. Therefore, it is the first time that interaction between WFH and the use of popular software, such as Microsoft Outlook, Skype, Oracle Global Desktop and TeamViewer, has been studied. The research unveiled the fact that Outlook calendars can be used for supervising employees, the fact that Skype cannot replace face-to-face communication between CRAs and managers or investigators – even though Skype has the technical characteristics to support successful remote communication – the fact that TeamViewer can be used for remote training and IT assistance and the fact that Global Desktop can offer access to Garden's terminals for employees who work remotely. It is obvious that today's electronic tools can offer significant assistance to homeworkers, significantly changing working conditions since Nilles (1975) started the discussion about telecommuting. As mentioned earlier in the Data Analysis chapter, Hera, who, when working for her previous employer where part of the IT department was in Lisbon, highlighted the reality of today's general working environment, which is worth noting again:

'I don't think nowadays, in terms of international companies and international trials, it's such a difference, so all are remote'.

Indeed, there was not much difference where CRAs were working from, as in both cases, whether working from Garden or from home, they would have to deal with a remote IT help-desk located in another separate location in London. Actually, as explained in sections 4.5 and 4.7, CRAs are aware of their colleagues' activities and workload through sharing their Microsoft Outlook calendars, they can contact each other through their Blackberries and they receive support and/or guidance from organisation premises through TeamViewer, making overall communication much easier.

On the other hand, concerning technical problems that IT may create, although 20 out of 21 CRAs claimed that they had experienced a technical issue during their working time from home, there was no evidence that IT problems could create a significant problem in their regular workflow. Even though the literature suggests that implementation of teleworking policies may increase IT risks (Peacey, 2006; Pyöriä, 2011), or create unexpected problems (Collins, 2005), no evidence arose from this research that implementing WFH created significant problems for either employees or employer. CRAs mentioned slow connection, the lack of updated software, the difficulty of installing new software in their laptops, the poor reception of their mobile phones, and the lack of machinery such as faxes and a professional printer, as being the main problems that they faced with WFH. However, none of these issues were described as having a permanent or significant negative impact on their jobs. Even slow connectivity speed, traditionally considered as a possible problem for WFH (McNaughton et al., 2014), was not considered a significant problem by the Quality Manager, Themis, who found her slow broadband speed at home

adequate for all her necessary tasks (see Section 4.5). To give another example, Skype – which can be used for video-conference, as presented in the Data Analysis chapter (Section 4.7) – requires low speed and does not require significant technological infrastructure.

Another aspect of the IT factor identified in this research was the lower total cost of implementing a home-based office. A laptop, a mobile phone, a docking station, a personal printer, a mouse and £100 to buy an ergonomic chair are the initial equipment that Garden offers to new employees and cannot be considered as an expensive investment. Today's cost of this equipment is significantly less than the cost of offering IT support to a telecommuter, as presented by Belanger et al. (2001) in Table 3. This research complements the earlier research of Oettinger (2011) who claims that an important reason for the expansion of WFH is the fall in IT costs.

Security of data is another important issue on the WFH agenda that again rarely concerns social scientists. Therefore, this research is one of the very few studies that has investigated security issues. Although the Data Protection Act 1998 focuses on the confidentiality of patients' personal information (Medicines and Healthcare products Regulatory Agency, 2012) and Garden's website makes it clear that one of the main aims of a CRA's duties is to safeguard the rights and wellbeing of patients, there is no standard way to handle storage of patients' data. The regulatory authorities (MHRA) do not clarify the way that organisations need to protect personal data. Poseidon explained that the use of a laptop to connect to the Internet through WiFi was riskier than connecting directly through Ethernet cable. On the other hand, CRAs mentioned that they had not experienced any issues with viruses or malware (only one CRA,

Penelope, had experienced an incident and she blamed her visit to the office and connection to the central system for this). However, it is important to remind the reader that it only takes one security breach to change all perceptions and standards regarding what is considered as secure data storage. The case of CRAs losing devices confirms Schneier (2000) who blames most security breaches on humans and not on machines. On the other hand, burglary of the headquarters, or the fall of the central system that Themis described, is evidence of the dangers of centralising the devices in one workplace. Generally, the security needed to maintain smooth IT operation needs further investigation. It is evident that the current research cannot claim that it has covered the topic extensively. It is important to remind the reader that the aim of the investigation of the technological factor was to identify whether CRAs could work remotely without major implications and there was a clear answer: CRAs can do their work remotely.

The most important finding of this research concerning the office equipment and devices used by CRAs at home is the lack of proper ergonomic facilities. The research adds to earlier research by Harrington and Walker (2004) who claim that very often teleworkers do not have training or a how-to when it comes to WFH. As a result, CRAs declared that they may work from a sofa or sitting on a dining chair. They do not always have the sufficient space to work in as they may live in a '*tiny*' house, as Artemis mentioned, making it difficult to have an ergonomic chair or a professional lamp. Eos's complains about headaches, as a result of keeping her neck down when working at her laptop, or Athena's tired eyes, as a result of focusing on her laptop's small screen, all confirm the findings of Douglas (2011) and Ellison (2012), who link WFH with pain and

discomfort because of the lack of an ergonomic way of working. Home-office ergonomics is a field which definitely needs to be further investigated.

Another research sub-question which needs to be discussed is the performance of Garden's CRAs. It is not only cost reduction and employee happiness that WFH offers; there is a need also to examine and evaluate the final outcome and the quality of work of the remote CRAs.

5.4 Research Sub-question 4: How is the performance of home-based CRAs evaluated?

The overall perception that this research has created is that WFH improves CRAs' performance, confirming earlier studies (Stavrou, 2005; Harker-Martin and MacDonnell, 2012; Limburg and Jackson, 2007; Martínez-Sánchez et al., 2007; Atkinson and Hall, 2011). Indeed, the majority of CRAs claimed that they could focus better when they worked from home. Managers also mentioned that they planned tasks which needed a quiet environment without disruptions for the day of the week that they worked from home, confirming earlier research which links WFH with increases in employees' productivity (Baker et al., 2007; Mello, 2007; Cascio, 2000; Huws, 1994). In contrast to earlier studies (Sullivan, 2000; Duxbury and Higgins, 2002; Felstead et al., 2005), CRAs stated that they did not face significant disruptions from other family members or friends (except some comments prompted by humour or curiosity) that would downgrade the quality of their work. WFH proved that it did not create disruption of communication between CRAs and managers or staff of the trials team as mobile phones and particularly emails could play a significant role as

communication tools, confirming the findings of Markus (1994) and O’Kane and Hargie (2007), who link the use of emails with effective ways of communication. Another performance factor that this research unveiled was the link between WFH and reduced absenteeism, confirming the work of Stavrou (2005) and Duxbury and Higgins (2002), who link working away from the office with reduced absenteeism. Recorded absenteeism of homeworkers was reduced, compared with that of their office-based colleagues, and this information originated not only from CRAs’ statements but also from Garden’s departmental records. According to these records, presented in Section 4.6, office-based employees had a 2.3-times higher mean and a three-time higher median of sick leave than home-based CRAs. The second important quantitative finding of the performance section of this research is about continuity of work. This research clarified that CRAs continued to work from home during adverse weather conditions, confirming the findings of Olmsted and Smith (1994) and Duxbury and Higgins (2002), during strikes, confirming the work of Mello (2007), and during large sporting events, such as the Olympic Games of 2012, confirming the findings of Stevens (2012), without any negative effect on the quality of their work.

The most important negative element identified in this research, confirming previous studies (Dimitrova, 2003; Peters and Van der Lippe, 2007; Golden, 2008; O’Neill et al., 2009; Nätti et al., 2011), was the longer hours that many of the CRAs declared that they worked from home. On the other hand, there was no evidence of pressure from the management team, or of a well-established organisational culture requesting longer working hours from CRAs. It is the nature of the CRA job, and the difficulty of switching off, as there is a feeling

that they always have to be available (Mustafa and Gold, 2013), which needs to be blamed for the longer working hours. It may be also the unclear boundaries between work and home (Vittersø et al., 2003), or the artificial and rather false perception of CRAs that they have to demonstrate visibility (Felstead et al., 2003; Davenport and Pearlson, 1998) to overcome office-based managers' stereotypes about visibility and presence, that explain these longer working hours. Certainly, there was no evidence from this research that the longer hours of work were the result of the employer's policies or managerial pressure towards CRAs. Finally, it is important to highlight that the existing research offers a new definition of what are considered working hours. Concerning longer hours of work, the most important contribution of the current research is that the comparison between hours working in the office and hours working from home includes commuting time. In other words, the author cannot accept that the long working hours, which CRAs claim that they work, are longer than the total hours of working-from-office plus commuting that they would have to spend if they had to work in London in a daily basis. It is important to highlight that the average of two-and-a-half hours (to be precise, the average CRAs' commuting time for a return trip to and from Garden recorded in this research was two hours and 24 minutes) of commuting time that a CRA needs to commute to and from Garden is significantly longer than any recorded additional working hours. For example, Themis, the Quality Manager, declared that she started work earlier and finished later when working from home, but these extra hours of work are not longer than the four hours of commuting time that she avoids when WFH. Moreover, a recent decision of the EU Court of Justice about recording traveling time to customers as working time (Court of Justice of the European Union,

2015) has added value to this argumentation. As explained earlier, working for a customer on a contract basis is very common among CRAs (as demonstrated earlier, Garden has a few on-contract freelancers), especially those who work in commercial trials and thus this decision will be very influential for the whole clinical-trials sector. The next topic discussed is the management/supervision factor which, as explained in Section 2.3.4 of the Literature Review chapter, is generally crucial in the successful implementation of the WFH phenomenon.

5.5 Research Sub-Question 5: Is There a Difference in Management and Supervision as a Result of Lack of Direct Supervision?

This section will focus on the lack of supervision and face-to-face contact with managers for CRAs working from home in Garden. CRAs and managers made it clear that they did not link management with visibility. Therefore this research complements earlier research which focuses on the need to abolish Taylorist principles of management (Peters et al., 2010), create an environment of high trust (Duxbury and Higgins, 2002; Felstead et al., 2003; O'Neill et al., 2009; Offstein et al., 2010) and focus on sharing information instead of on surveillance (Lautsch et al., 2009) to achieve successful implementation of the WFH model of work. As a result of the existing technology, the communication needed does not require the continuous presence of CRAs in the central workplace at Garden. By visiting the office once every two weeks, or even every two months, and resolving all issues by email or employees' Blackberries, CRAs proved that being there, working together, side-by-side with their managers in Garden, was not a necessity. The nature of the job and CRAs' professionalism ensured that

CRAs performed their tasks in high standards, confirming the findings of Tietze and Musson (2003) who link professionalism and the nature of the job with employees' ability to manage their conduct and tasks autonomously. Although the management team clarified that trust was an important part of Garden's managerial mind-set, recruiting and selecting and training CRAs and clarifying their duties proved to be significant factors in the successful implementation of WFH, confirming the research of Overmyer (2011) who emphasised the good training and orientation of both teleworkers and managers. Despite the existence of earlier research which does not link the training of home-based employees with their outcome (Baker et al., 2006), this research found that recruiting and selecting suitable CRAs was especially significant when recruiting CRAs who had not previously worked from home. It is important to remind the reader that, as mentioned in Section 2.3.4, a teleworker's identity is critical to the efficient implementation of the telework (Tietze and Musson, 2010).

Another important channel of communication that was investigated in this research, and which produced interesting results, was the potential use of Skype to communicate between CRAs and the management team at Garden. CRAs and managers explained that they did not use Skype, or any other form of synchronous communication, and most of all declared that they were reluctant to use it. The overall perception of both managers and CRAs was that Skype abolished some of the benefits of WFH. It was found to be '*intrusive*', '*unnatural*' and definitely not an efficient way of replacing face-to-face communication, confirming the findings of Coenen and Kok (2014), who found that the use of virtual tools could not abolish the need to use physical, face-to-face contact. Skype was described as a potential threat which may change

dress code as it may bring back the business dress, even the tie, for an e-meeting with managers and Investigators. Also important here is the nature of the work and the perceived need, as expressed by Aspasia, a new CRA at Garden, to have *'things written down'*, or as Aphrodite, another CRA, mentioned, to *'know what has been said'*. This need to record everything that *'has been said'* made staff express their preference for the use of emails and perceive Skype, and the verbal and visual communication that it offers, negatively. The research confirms that of O'Kane and Hargie (2007), who suggest that emails interplay with face-to-face communication to create a complex style of communication. CRAs made it clear that phone and face-to-face communication were sufficient to cover all their verbal communication needs.

The general managerial framework, as described by the CRAs, and mainly the management team, were presented as modern, progressive and result-oriented with an emphasis on a different mind-set based on trust, confirming earlier studies which link WFH with the need to have performance- and result-oriented management (Offstein et al., 2010; Mahler, 2012), a task-orientation style of leadership (Madlock, 2012) and a modern workplace (Pyöriä, 2011). Eunomia, the Director, claimed that Garden was not a place where management was based on control, visibility and micro-management, confirming the work of Gajendran and Harrison (2007), who suggest that management of teleworkers needs to be based on their output and not on observable activities. Although there is no reason to doubt the originality of the image of Garden as a progressive workplace, as described by Garden's management team, there are

elements of the hierarchical and bureaucratic legacy of the four fundamental institutions which cannot be ignored.

Although the overall perception of all CRAs and managers was that Garden's management was based on trust and professionalism, there was evidence that micro-management was still in use. First, it is important to discuss whether it is feasible to have a full virtual office in Garden. Themis, the Quality Manager, declared that she found it difficult to accept that the whole office may be virtual in the future. According to her, CRAs, the '*flimsy sides of the box*', can work from home, but management was the '*solid corners of the box*' which had to be in the office to retain the structure in place, otherwise the '*box will fall down*'. In other words, Garden's management appeared not to support a fully virtual office, confirming the work of Pyöriä (2011) who finds that traditional management culture may be an important factor in the slow diffusion of telework. The Quality Manager's expressed reluctance towards the further expansion of the WFH phenomenon to the management team of Garden is in line with Dimitrova's (2003) findings which link the presence of traditional management stereotypes with the lack of diffusion of telework. On the other hand, the current research clarified that working one day from home could still offer valid assistance to employees who struggle with childcare and commuting expenses in an expensive city such as London. The importance of this finding about having one day per week of WFH is that, by presenting the fact that managers at different managerial levels (i.e. line managers, such as the SCRA and the Systems Executive, an operational manager, such as the Quality Manager, and a strategic manager, such as the Director) can work from home one day per week, a large part of the traditional concerns about the

inappropriateness of other occupations working away from office premises are minimised. In particular, managers of various levels and responsibilities have been proved capable of carrying on with their work from home. They declared that they kept group-specific tasks for the day that they worked from home without any harmful effect on the quality and flow of their work. For example, both the subordinates and the clinical-trials teams knew that the Director was not at Garden on Wednesdays and that the Quality Manager was not there on Thursdays and therefore they tried to avoid meetings, or other face-to-face communication with them, on these specific days. In case of emergency, there was always one member of senior management at the premises to resolve any unforeseen problems. Similarly, Senior CRAs tried to arrange their atypical 'shifts' in a way which ensured that every day one of them would be present in the office. In conclusion, this one-day absence partially contradicts the traditional approach that a teleworker's identity and characteristics are important for the successful implementation of WFH (Tietze and Musson, 2010). WFH could also work for the Trials System Executive who had a unique role in the office which nobody could replace. Indeed, the use of Global Desktop and TeamViewer offered him access to Garden's central system and all laptops or PCs (including his own at headquarters) when working from home. Hence, these internal, atypical arrangements among members of the management team partially minimised the fears that many of them had about the inappropriateness of WFH as a model of work for managers. These varieties of tasks and duties that could be performed from home by Garden's management team also challenged the previous perception by CRAs (61.9 per cent of CRAs) that it was the nature of the CRA job that permitted WFH. It seems that, by

reorganising their tasks, managers could also work from home without creating any significant problem in Garden's performance or workflow.

The second important issue that needs to be critically evaluated is the degree of progressive mind-set that an organisation such as Garden needs to adopt to achieve successful implementation of WFH. Although employees of Garden declared that it was a modern organisation in which the management's ethos was based on trust, there was evidence that technology could be used to return to the three sisters (not Chekhov's) of working misery (i.e. Fordism, Taylorism and Toyotatism). The researcher, taking into consideration the available software and documents that the CRAs uses, created Table 20 in Section 4.7 which includes potential tools and evidence of micro-management. The idea for creating such a table originated from the Quality Manager, Themis, who gave subtle hints about the way she monitored CRAs' performance. Despite the general reassurances about the progressive mind-set of management, Themis claimed that she could evaluate CRAs' performance through emails, telephones, reports and metrics, which are considered by the researcher as evidence of micro-management. Despite the fact that there was no evidence of extensive use of micro-management techniques at Garden, the existence of elements of Table 20, or the fears that the '*box will fall down*' in the case of the whole management team becoming virtual, were important elements which motivated the researcher to examine critically the link between surveillance, technology and WFH. It is important not to forget that Garden's four funding and founding organisations are four traditional bureaucratic institutions which managed to engage the old with the new and the traditional with the progressive mind-set to create Garden. Therefore, as was the case in other public

organisations (Taskin and Edwards, 2007; Taskin, 2010), Garden has provided further evidence which confirms that WFH may be implemented successfully in a bureaucratic organisation. As in Garden's case, technological inventions and new advanced software may assist the successful implementation of WFH in organisations which traditionally would not favour such modernity. For example, in the Literature Review chapter, an example in China was mentioned where WFH is successful when telecommuters know that the traditional managerial culture still exists and that the supervisors are also telecommuters with no reduced legitimacy and reward power (Raghuram and Fang, 2014).

This example from China is further evidence that WFH may be introduced in different cultures and management environments, challenging the classic approach that successful implementation of WFH is linked with trust (Duxbury and Higgins, 2002; O'Neill et al., 2009) and result-oriented environments (Offstein et al., 2010). It is technology that can facilitate and influence different types of organisations (including those who focus their management on control) to use WFH successfully. It is important to highlight Dimitrova's (2003) research to remind us that WFH cannot change pre-existing social relations, inequalities and hierarchical structures. Similarly, this research does not claim that WFH may influence or change the culture of an organisation. Existing technology may be used to support extreme surveillance, leading the '*workplace of 2016 to echo Orwell's 1984*' (Dredge, 2015), or to offer CRAs an enhanced quality of life and a positive WLB. Indeed, Tietze et al. (2003: 161) highlights the influence that various uses of technology may have on employees:

'Such [communication and information] systems can be used as control mechanisms, as well as having liberating potential. In the end, it is likely

to be the authority structure that will determine how these systems are used.'

Another important aspect of the management agenda that this research examined was the career prospects and declared professionalism of CRAs. Traditionally, there is a part of the literature – for example, Kelliher and Anderson (2008), Church (2015) and Bloom et al. (2015) – that links the lack of visibility with problems in the promotion of remote workers. On the contrary, however, this research found that the significant majority of CRAs (90.4 per cent of the sample) declared that they did not link physical presence with promotion in Garden. They mentioned that their professionalism was visible through their work and examples of CRAs who were promoted to become Senior CRAs were not rare at Garden. Although there was no evidence that CRAs found any significant obstacle to their career progression as a result of WFH, there is a need to examine the occupation itself carefully to verify some assumptions about their degree of professionalism. The occupation of CRA has been presented in this thesis as a well-established professional role which requires well-trained and qualified people with high skills (and, as Artemisia signified in Section 4.3.2, it is not a starting role in pharmaceutical companies). However, is monitoring clinical trials and helping medical investigators a career? Is all this involvement with bureaucratic tasks a solid path to a career? Is it right to claim that this research examines professionals who are making a career? All these questions need to be answered in the following section.

5.6 Clinical Research Associate: A Career Job

According to the Oxford Dictionary, 'career' is a '*profession or occupation with opportunities for advancement or promotion*' and CRAs expressed their opinion that there was no negative effect of WFH on their advancement or promotion. It is important to highlight that CRAs who left Garden during the period after the interviews were advanced to Lead CRAs or Trial Managers in other organisations, very often in office-based roles. In Garden, in the two years following the six-month period in which the interviews were conducted (i.e. January to June 2014), three of the CRAs were promoted to become office-based Senior CRAs, proving that being home-based did not influence their career negatively. The choice to work flexibly, having covered their commuting expenses, and being trusted to work without close supervision are evidence that CRAs are employees who are professionals and have a career. To be explicit, there is a need to clarify what is considered as a career and to investigate the job characteristics of the CRA profession and look at how these characteristics can be linked to a career. According to Schein (1996), there are eight categories of concept ('*anchors*') that people may adopt in order to convince themselves that they follow a career: autonomy/independence, security/stability, technical competence, general managerial competence, entrepreneurial creativity, service or dedication to a cause, pure challenge and lifestyle, which can provide one or more reasons for an employee to follow a specific career. The CRAs declared that they worked autonomously (autonomy/independence), had the security to work in a public organisation, most of them under a permanent contract (security/stability), were technically competent in the field of

clinical trials (technical competence), were dedicated to innovation (dedication to a cause) and had a good WLB (lifestyle). Moreover, an additional characteristic of a career which needs to be discussed is pay. CRAs' pay needs to be discussed and compared with the pay of other public servants to examine whether CRAs have a satisfactory reward incentive that can make them claim that they have a career. The CRAs' salary at Garden was £32,277-£38,511 (grade six in an eight-grade pay scale) plus London allowance (£2,323). At this point, it needs to be clarified whether an annual salary of about £35,000 is sufficient reward for an employee who may be labelled as professional and who seeks career advancement. The answer to this question needs to be discussed against the background of the current austerity-led economic environment as discussed in the Literature Review chapter. Again, emphasis needs to be given to the fact that the CRAs employed at Garden are public servants who have to work in a very tight economic environment. Even earlier, before the aftermath of the 2007-08 economic crisis, salaries in the public sector, compared with those in the private sector, were significantly lower. For example, based on Dymond and Murlis (2009), Appendix 8 includes top public-sector jobs and their basic salaries. In particular, Appendix 8 identifies a problem about reward in the public sector. Indeed, when the Head of NHS, the biggest employer in Europe and one of the biggest in the world with more than 1.3 million employees (NHS Jobs, 2015) rewards the Chief Executive with £260,000 (including bonus pay), a £35,000 salary for a CRA, or £45,000 for a Senior CRA, can be considered as significant pay for people who can claim that they have a career. However, it is not only Garden's NHS partners that keep pay rates low. Olympus, which is the academic branch of the four organisations that support Garden financially,

offers a starting salary of £39,658 for a Lecturer in Microbiology or Bioinformatics (information from organisation's job-opportunities website), which is not significantly higher than the starting salary of Garden's CRA (£32,277). In conclusion, the current stagnant economic environment (Stiglitz, 2015; Piketty, 2014; Krugman et al., 2013; Varoufakis, 2013; Konzelmann, 2014; Pollin, 2013) and the tradition of lower pay in the British public sector (Dymond and Murlis, 2009) are two important reasons to support a claim that the existing CRAs' financial reward can be classed as the reward of a career employee.

The following section is a summary of the scientific contribution of the current research as presented in both the Data Analysis and the Discussion chapters.

5.7 Generalisability of the Findings and Limitations of the Study

A common objective for any research is to produce new knowledge and results which can be used by other researchers and organisations. Although very often single-case studies face criticism concerning their ability to produce generalisable results, the author of the current case study believes that this study has produced evidence of development of theory, or new knowledge, that may apply to a broader category of employees and not only to CRAs.

Historically, as mentioned earlier in Section 3.10, an explanatory single-case study of the Cuban missile crisis (Allison, 1971) became a key-case and a classic in political sciences (Yin, 2014), Galileo's single experiment (another form of case study) in gravity ended 2,000 years of Aristotelian dominance and started a new theory (Flyvbjerg, 2011) and a summary of case studies was

used to verify the existence of global warming in environmental sciences (Cook et al., 2013). Similarly, the present case study may offer various degrees of new knowledge which may be used by other groups of employees and organisations.

The author of the current thesis understands that the findings of the five topics presented cannot offer the same degree of generalisability to different employees and organisations. It is obvious that the CRAs' views and experiences in Garden in central London may be different from the reality that lawyers, architects or public servants face in Newcastle, Marseilles or Athens. On the other hand, the technological and financial part of the findings can be characterised as significantly more generalisable and these two findings will be discussed in the following paragraphs.

5.7.1 Technology and Cost Reduction: The Most Generalisable Results

To start with the technological factor, software such as Microsoft Outlook Calendar (for sharing calendars), Skype (for communication), TeamViewer (for training and IT support), and Citrix (for access to organisations' files through Global Desktop) are used by millions of companies around the world. If a home-based CRA can be trained on completing Adverse Events Reports by watching on their screen an office-based CRA do this through the use of TeamViewer, then why not try, for example, to use this software for training a new lecturer on how to use Turnitin software for marking exams? This research within Garden provided data and examples of how existing technology can assist employees

perform key CRA tasks, such as communication, training and supervising, from a distance and the way that these tasks are performed may be easily copied by many categories of employees and organisations in other sectors of the economy, such as technology, pharmaceuticals, insurance etc.

The second category of the findings, which may also have a significant degree of generalisability, is cost reduction. Although other cities do not have such expensive travel fares and childcare charges, not using bus, underground, train or car, as a result of staying home to work, will always be cheaper than using them. It will always be cheaper for a company to host 100 employees at headquarters than 200, no matter whether the company is located in London, Bradford, Hong Kong or Oslo, whether it is in pharmaceuticals, insurance or IT, whether it is public or private. It will always be cheaper not to need a babysitter or a childminder for childcare as a result of finishing your work and already being at home than to need somebody to care for the children when waiting at a railway station to return home from the office. On the other hand, it is also safer to claim that the need for expenses reduction that WFH offers is more intense in large cities. For example, this research at Garden cannot claim to produce generalisable results for companies operating in distant rural areas where the cost of travelling from the local community may be lower. It cannot produce generalisable results for companies that may operate inside commercial zones but where their employees commute by walking or cycling (i.e. zero commuting expenses) as staying home and WFH may increase their personal expenses for gas and electricity. It is important to highlight that heating and electricity expenses may vary from location to location, making generalisability difficult. For example, Kitou and Horvath (2003) signify the limitations of the

generalisability of their environmental research about emissions as other places have different heating and cooling or commuting customs. Despite these limitations concerning reduction of expenses and existing technology, the results based on these two research sub-questions are the most generalisable findings of the present research. On the other hand, the influence on building a new theory and the generalisability of the remaining three categories of findings (WLB, performance and management) may significantly vary from place to place and from employee to employee, as we can see in the following section.

5.7.2 Generalisability and Work-Life Balance, Performance and Management: Scientific Contribution and Limitations

Certainly, the findings about WLB, performance and management may be used in regard to other companies which also work in the clinical-trials sector. Although WFH is used by many companies (mainly CROs) which operate in clinical trials, this is not always the case. It is important to remember Eos's statement that there are companies that expect CRAs to work in the office when CRAs are not out at hospitals for monitoring. Findings about Garden's management and CRAs' WLB and performance could be replicated and used in other organisations (CROs) which operate in the clinical-trials sector. However, it is not only companies that operate in clinical trials that can use and learn from these findings. Other companies, which also work with a results-oriented managerial mind-set and/or have a significant number of professionals, managers and generally knowledge workers who use ICTs, may find the findings of this research useful. The findings may be useful for companies,

particularly CROs and pharmaceutical firms, whose needs and culture are similar to Garden and who operate in Britain. For example, companies which work in a Western framework [as defined by Huntington (2002) including European-American civilisation], or companies which operate in the general British working framework of low distance power, individualism and willingness to risk (Hofstede, 1994; Hofstede et al., 2010) may find the findings of this research useful, particularly those related to management and performance. Moreover, the findings may be useful for companies who face difficulty in recruiting and retaining high-calibre staff as a result of operating in a highly commercialised, competitive area or the opposite case, companies that work in an area with no qualified and experienced employees. It is important to remind the reader that Garden has been operating for a few years (since 2007) and, as a result, has all the characteristics (moderate salaries, informal communications and a period of creativity) of an organisation which is in the early phase of growth (Greiner, 1998). Similarly, organisations which try to launch a new start-up enterprise in a competitive environment may adopt WFH policies and, as presented in this research, they can improve their competitiveness in the labour market. On the other hand, the degree of generalisability may vary for different cultures, countries and sectors and according to a company's stage of growth.

The work of Raghuram and Fang (2014), which indicates the difficulties of implementing WFH policies in China where management is based on a different framework (i.e. high power distance, paternalism and high-context communication), is an example of how research in a different cultural framework can challenge the generalisability of the findings of the research at Garden. However, as explained earlier, existing technology can assist companies to

implement WFH policies without having to change the cultural framework. Hence, there is no evidence that WFH is able to change the political and cultural framework of an organisation as it did not manage to create an egalitarian environment in companies and families. WFH may be implemented and interpreted differently in various locations of the world. For example, WFH has been used to satisfy the traditional management of high power distance in China (Raghuram and Fang, 2014), to serve the customs of the patriarchal family environment in Turkey (Sarioğlu, 2013) or to modernise the bureaucratic environment of a public organisation in Belgium (Taskin and Edwards, 2007; Taskin, 2010). As hundreds of textbooks on employment relations describe a variety of problems for different companies, sectors, countries and cultures, correspondingly moving employees from office to home in various companies around the world will not produce a description of a homogeneous working-environment framework. It is important to remember that people who work at home are not a homogeneous group (Felstead and Jewson, 2000). However, the current research at Garden found that the different roles and management cultures may limit the use of WFH but not abolish it. In other words, despite the fact that the Quality Manager or the few Senior CRAs in Garden considered that the managers needed to be located in the office, the single day that they worked from home was evidence that flexibility was appropriate for a broader range of people and roles. Critical towards-the-generalisability-of-WFH voices may claim that it is the nature of the job that permits CRAs to work from home but even if this is true, the management team at Garden, by working one day per week from home, proved that rearrangement of tasks may be used to expand the use of WFH to wider categories of employees beyond CRAs. It was

Themis, the Quality Manager and the most critical voice against the total virtual office, who claimed that she reorganised her work for the day that she worked from home or when there were special, urgent issues, such as an inspection by the regulatory authorities (MHRA), proving that rearrangement of tasks can enlarge the days that may be used for WFH.

However, it is not only the differences in management styles and cultures that limit the expansion of WFH. The perception about WLB may be different from place to place and from sector to sector. Despite the fact that CRAs declared that they were happy with their WLB and their quality of life, the feeling of isolation, identified in Section 4.3.3 by 52.3 per cent of the CRA sample, may be another reason to limit the generalisability of the research. In other words, happiness is a feeling of emotion full of subjectivity and it is difficult to generalise this to other employees and organisations. It is naïve to consider that employees' WLB is influenced only by one single-dimension factor such as WFH. The present thesis has demonstrated that there is an association between WFH and WLB, but there is no proof of a causal relationship. There is no evidence that it is only WFH that causes a good WLB. It is the reputation of the organisation, the additional terms and conditions, the social or marital status of employees and the personal needs and the cultural background of both employees and employers, which may play a significant role in employees' overall perception of WLB.

Finally, the high level of performance that both employees and managers claimed need not be perceived as an extensively generalisable condition. Besides the traditional doubts about self-reporting performance, it is important to remind the reader that the research focuses on professionals who operate in

the UK. As elements of the occupation or the working environment are tested in other work locations or countries, the generalisability of the results may be weakened. The example of Western multinationals who tried to introduce WFH policies into China, but had to withdraw these policies because of the different culture and different working norms and customs (Raghuram and Fang, 2014), is an example which highlights the limitations of WFH and improved performance when WFH is implemented in other national contexts and cultures. The following section emphasises the reflections of the researcher concerning the methodology of this thesis. The aim is to evaluate the methodology and particularly the theoretical ontological framework and the research design used in this research.

5.8 Realism, Grounded Theory and Working from Home

Philosophical arguments rarely persuade anyone but philosophers...
Maxwell (2012: ix)

The philosophical framework that covered the design of this research was based on critical realist ontology and epistemology. Maxwell (2012) claims that critical realism combines realist ontology with constructivist epistemology and this concept covers the theoretical approach of this research. As described in Section 3.3, this thesis accepts the existence of objective realities such as the need of people to work, create families and have a happy, balanced life. On the other hand, this research challenged the need to have employees working from a centralised place, having to commute many hours to reach the premises and

struggling between balancing childcare and domestic jobs and having a career. The research was based ontologically on a realist approach of recording objective realities but epistemologically, it was based on a pure, qualitative case-study approach (constructivist approach).

On the other hand, the classic Bhaskar's (2008) critical realist methodology and analysis includes the identification of structures and mechanisms which generate phenomena. O'Mahoney and Vincent (2014) identify the existence of structures, systems, powers, classes and causal powers as part of the critical realist analysis. Maxwell (2012) states that critical realists believe in causality and mechanisms, whilst Bryman (2012) clarifies that critical realists try to identify the structures of the world in order to change them. However, the analysis of the current thesis was not based on this typical critical realist approach. The whole project was analysed mostly as a critical empiricist project. In particular, although CRAs were asked to mention potential negative aspects of WFH, such as WLB problems created as a result, IT difficulties, career-progress difficulties and promotion exclusions caused by CRAs' physical absence from headquarters, lack of training and/or communication misunderstandings, the overall feedback given was positive. Therefore, the research did not manage to record any of the tensions, systems or powers influencing CRAs. The overall perception of the CRAs' work and life was one of harmonic co-existence between CRAs and management at Garden and between CRAs and their families at home. The data generated did not indicate that systems, powers and mechanisms may influence CRAs' working environment or create clashes or tensions between managers and employees or between workers and family members. Thus the whole project offered an

exploration and description of the phenomenon but did not make a significant contribution to explaining thoroughly the powers (causality) behind the existing system of Garden. Although the effects of powers such as austerity economics, public-service management legacy, gender stereotypes, the existence of children, family obligations etc., may be identified as external powers which influence the system of Garden, the fact that the analysis is based on a single case-study does not permit the researcher to claim that the causality of the powers' influence is proved. Thus the analysis of data was based on the traditional case-study design (mainly Yin, 2014) and grounded-theory principles (mainly Charmaz, 2005 and Gibson and Hartman, 2014) and not on the traditional critical realist methodology (for example, Bhaskar, 2008 and O'Mahoney and Vincent, 2014).

It is important to highlight that the grounded-theory label given to the current analysis of the research signifies that the research can lead to new knowledge which, in our case, is the understanding of the role of CRAs in Garden and the characteristics of their WFH experience. It is important to remind the reader that Gibson and Hartman (2014: 2) explain that grounded theory was created to explain '*what is going on*' in a particular field, in our case the field of clinical trials and home-based CRAs. As analysed in the Research Methodology chapter (Section 3.6), the recursive process of analysing data – originating from the CRAs' interviews which was then compared and/or triangulated with the managers' interviews and finally all of them were compared, enlightened, interpreted or rejected by the additional secondary data – can be classified as grounded-theory methodology where this recursive process was used to increase the validity and reliability of the data.

5.9 Conclusion

The Discussion chapter offered an evaluation of all the findings presented in the Data Analysis chapter. Based on the five themes of the research sub-questions, the CRAs' work and personal life experience were investigated. The research at Garden identified that the CRAs were happy and preferred to work from home. WFH helped them with domestic jobs, small tasks in the community and childcare responsibilities. However, it is not only a balanced life that WFH offers to employees. WFH was proved to offer a significant financial benefit to CRAs and to Garden. It offered CRAs significant cost reductions, mainly in commuting and childcare, whilst helping a new organisation such as Garden to attract and retain qualified staff living outside London and at the same time reduce significantly the overhead costs that would be required for hosting them in London offices. The most important finding concerning the technological factor was that CRAs used devices (mainly laptops and mobile phones) and software (Microsoft Outlook, TeamViewer, Global Desktop etc.) to communicate with their managers and the trial teams, minimising the need to have face-to-face contact. This case-study identified that the existing technology was sufficient to help CRAs to perform all their duties successfully and to fulfil their communication needs at home. However, CRAs and managers expressed their opposition to using Skype as a tool that would replace face-to-face contact. In addition, the research identified concerns about security issues that the decentralisation of the devices may cause, whilst the most serious problem unveiled was the lack of ergonomics training. The fourth theme discussed in this chapter was the performance of CRAs. The CRAs declared that they performed

better when working from home, whilst managers confirmed that lack of physical presence did not influence CRAs' performance negatively. It is important to highlight that WFH decreased employees' absenteeism, whilst the co-existence of CRAs and family members at home did not create any problems. Concerning CRAs' performance, the only issue recorded and highlighted in this research was the longer hours of work at home. However, these hours of work were not more than the total required time for commuting to and from premises in London and working there. Finally, concerning management and supervision, the most significant finding of the research was that WFH was implemented in an organisation which supports management culture based on high trust and the professionalism of employees. However, technological tools such as email, electronic Case Report Forms (CRFs), shared Outlook Calendars, metrics etc., can be used for micro-management and surveillance.

The following chapter is the conclusion where the focus is on the summary of the most important findings of this research and their link with the existing literature. Moreover, concerns, limitations and suggestions for further research are mentioned in an effort to highlight the gaps in knowledge that the findings of this research revealed.

CHAPTER 6

6.0 Conclusion

6.1 Introduction

The final chapter of the thesis summarises the topics investigated through the whole research project. It evaluates the implications of the findings and the discussion. In particular, in Section 6.2, a summary of the research is presented, which focuses on the entire research process, including the major findings and contributions of the thesis. The in-depth analysis of such a variety of topics led to the identification of many aspects needing further research. Section 6.3 will include recommendations for future research of these aspects.

6.2 A Research Summary

The main aim and the most significant contribution of this research were to explore and map the occupation of CRA and the working and family experience of CRAs through the context of WFH. The researcher focused on the CRA profession which has never been studied before in such an extensive way. Medicines and therapies are tested all around the world and CRAs have the important role to safeguard that the process is compatible with the legal and good-clinical-practice global standards. Although CRAs have an important role in the process of developing clinical trials and new medical treatments, the researcher managed to find only a single academic report (Tufts Center for the Study of Drug Development Impact Report, 2012) which focused mainly on information about their workload and their work-life quality as self-recorded by

11,156 CRAs (45-50 per cent of the total global force of CRAs). Although there are many legal documents (for example, the ICH-GCP 1996, the Clinical Trials Directive 2001/20/EC and The Medicines for Human Use (Clinical Trials) Regulations 2004, Statutory Instrument No. 1031) and organisations' internal standard operating policies, which describe the duties and the ethical framework of CRAs' everyday work, there is no academic research to focus on aspects such as CRAs' WLB, performance and management. These aspects, together with the financial benefits that WFH offers to CRAs and their organisations, as well as the existing technological advancements used by these clinical-trials professionals, were the gaps in academic research that this research tried to cover. Through CRAs, the research investigated five important topics on the traditional agenda of WFH: WLB, Cost Reduction, Usage of ICTs, Performance and Management/Supervision. Although all these topics have been investigated by other researchers in the past, the current research offered a different view of the phenomenon of WFH through the CRAs of Garden. It is important to highlight that technological changes and the current unstable economic environment have changed the overall working environment and as a result the re-examination of these five topics offered new knowledge. The following paragraph contains a summary of the conclusions drawn from the combination of the literature review and the data analysis of the findings of the current research.

This research has presented WFH as a positive pattern of work, beneficial for both employees and employer. Although the Literature Review chapter covered a broader framework of the WFH literature, including topics not fully investigated in this research, such as criticism from feminist and trade-union

perspectives (Armstrong, 1999; Sullivan and Smithson, 2007; Sullivan and Lewis, 2001; Stanworth, 1996; Haddon and Brynin, 2005; Strachan and Burgess, 1998; Williams, 2014), or drawbacks from the implementation of WFH in developing countries or sectors with manual jobs (Sarıoğlu, 2013; Edwards and Field-Hendrey, 2002; Felstead and Jewson, 2000; Kantor, 2003; Tipple, 2006), the findings from the data collection and analysis of the current research focused on five key categories (research sub-questions) on the WFH agenda. As explained earlier in the Introduction chapter, when the aims and research questions were presented, the first important topic on which this research focused was the unique identity of CRAs' WLB. The research provided evidence that CRAs in Garden preferred to work from home as they found it convenient with balancing childcare, domestic jobs and everyday small aspects of their life such as deliveries, shopping, GP appointments etc. An overall positive feedback about their WLB was collected from the CRAs in Garden, which was in line with findings from earlier research about the benefits of WFH in employees' WLB [for example, Vermaas and Bongers (2007); Gajendran and Harrison (2007); Redman et al. (2009); Maruyama and Tietze (2012)]. The second theme examined was the cost reduction that WFH offered to CRAs and to their employer. In an economically stagnant era, WFH offers a significant decrease in Garden employees' expenses, mainly caused by reductions in commuting and childcare costs, confirming earlier research which highlights these benefits [for example, Duxbury and Higgins (2002)]. It is identified that WFH offers a significant help to employees and employers, not just in terms of cost but also in terms of saving working time. Moreover, it was confirmed that WFH provided significant financial assistance to a public organisation trying to

compete with large pharmaceutical companies and CROs. WFH enabled Garden to both attract and recruit high-calibre staff in a highly competitive sector and, in line with the literature, offered significant overhead cost reductions (Skyrme, 1994; Kurland and Bailey, 1999; Jaakson and Kallaste, 2010; Hilbrecht et al., 2013). This research highlighted the extensive pool of candidates which can be recruited. In line with earlier research (Kurland and Bailey, 1999; Thompson and Aspinwall, 2009), the investigation of Garden unveiled the important contribution of WFH to the organisation's efforts to recruit staff who lived in a widespread geographical area from Brighton to Peterborough, but who worked in an expensive city, in terms of living and commuting, such as central London. Thus, the research at Garden found that, in addition to the improved WLB that WFH brought to employees, WFH could be a financially beneficial model of work both for people and organisations. The third subject investigated in this research was the contribution of ICT in the expansion of WFH. In line with Duxbury and Higgins (2002) and Oettinger (2011), this research at Garden confirmed that the use and expansion of WFH is linked with the significant reduced costs of IT and the continuous development of technology. Shared drives and shared calendars, emails and mobiles, laptops and software, such as TeamViewer and VPN, have created an environment which can support the smooth operation of remote working. This research provided evidence that the existing level of technology permits an employer such as Garden to provide employees with all the necessary tools for WFH, abolishing the need to have employees physically present in a centralised office. It is important to highlight that it was the first time that research on WFH focused on the technological tools such as Skype, Microsoft Outlook,

TeamViewer, etc., that are used by homeworkers. On the other hand, the research in Garden further confirmed the evidence of Harrington and Walker (2004), highlighting the need to train home-based employees in ergonomics. The fourth topic investigated was the performance of home-based CRAs. Both CRAs and managers were satisfied with CRAs' performance and the research confirmed that WFH improves overall performance (Stavrou, 2005; Harker-Martin and MacDonnell, 2012; Limburg and Jackson, 2007; Martínez-Sánchez et al., 2007; Atkinson and Hall, 2011) and reduces absenteeism (Stavrou, 2005; Duxbury and Higgins, 2002; Huws, 1994; Kurland and Bailey, 1999), whilst there was no evidence that CRAs working remotely at home at a distance creates any kind of problem in communication among all stakeholders. Although the CRAs in Garden confirmed earlier research that WFH may lead to longer working hours (Golden, 2008; Dimitrova, 2003; Peters and Van der Lippe, 2007; Nätti et al., 2011), there was no evidence from this research that this drawback was the result of any type of managerial demand or pressure. It is the nature of the job and the sense of easy access which can explain the increase in working hours at home. However, the time saved by avoiding everyday commuting seemed to be significantly longer than the time that may be spent occasionally in working extra hours. Finally, the research found that, even though there was the technology to create an environment of micro-management and surveillance, Garden's management preferred to trust employees, confirming earlier studies which link WFH to the culture of high trust (Offstein et al., 2010; Peters et al., 2010). All managers in Garden provided a picture of a managerial culture that was results-oriented and not based on control and physical presence. Both managers and CRAs confirmed that existing technology was

sufficient to cover all their communication needs, whilst CRAs made it clear that they did not link opportunities for promotion with their physical presence at Garden, rejecting earlier studies linking WFH with negative perceptions about career advancement (Collins, 2005).

Although all these topics offered a significant contemporary insight into the WFH phenomenon, some of the subjects identified need further research. The limitations of this research and the topics suggested for further research will be covered in the next section.

6.3 An Agenda for Further Research

The research at Garden focused on a range of topics. From technological and financial aspects to issues of performance, management and WLB, it covered a large part of the literature. However, some of the topics discussed need to be further investigated and analysed.

To start with, one of the factors of the WFH phenomenon which needs further investigation is time. It is very difficult to find in literature any research which studies this phenomenon on a longitudinal analysis and evaluation. Tietze et al. (2009) highlight the problem of the lack of longitudinal studies which focus on homeworking and this is something that also concerns the researcher of the current thesis. It is not only the lack of the existence of many longitudinal studies that creates concerns about the testing of the recorded data from the phenomenon (i.e. WFH) and its long-term implications, but also the duration of what is called longitudinal study. For example, Vesala and Tuomivaara (2015),

who conducted a longitudinal survey about teleworkers in a rural area of the Finnish and Estonian archipelago, gathered data for a period of seven to a maximum of 12 weeks. Although this study produced overall positive outcomes (i.e. an increase in work satisfaction and a decrease in stress, time pressure, interruptions, exhaustiveness and negative feelings at work), it was not ascertained whether the results would be the same if the sample had to spend a significantly longer period of time in this specific archipelago. On the other hand, the present research about CRAs, although it is not longitudinal, can claim that it has produced outcomes from a diverse group of people where diversity is associated with the sample's different range of working experience. Indeed, seven out of the 21 CRAs (33.3 per cent of the sample) and the one home-based SCRA worked for five or more years (up to 12 years) from home and all of them had an overall positive attitude towards WFH. On the other hand, it is unfair and not sufficient to compare a few months or years of WFH with the experience and perception that people have as a result of the experience of centuries of centralised work. It is difficult to compare the effect of WFH on people who have worked for a few years from home with the situation of people who have worked a 'lifetime' at centralised workplaces. Although the discussion about WFH is about 41 years old – evaluating evidence since Nilles (1975) – there are very few people who can claim that they have worked from their home for their entire working life, whilst generally, continuous technological advancements have significantly changed people's experience of remote working. It is important to remember that the important technological changes are relatively recent and that there is no complete and accurate record of their long-term influence on the current reality of work. To summarise, it is important

to investigate WFH for a significantly longer period of time to have a better understanding of the phenomenon and of what its long-term effects on people and organisations could be.

Isolation is another topic needing further research. Confirming previous studies, the research identified the issues of isolation and loneliness even if there was no direct question about them. Many CRAs claimed that they sought hobbies and things to do in the community with friends and family to fill in the time that they gained as a result of WFH. Generally, this movement of social activity, from the centre to the periphery and from the capital to the local community and neighbourhood, that WFH may bring, may cause a significant change in human everyday reality and this change would be an important topic of interest for many social scientists.

Another theme presented in the research and needing further investigation is the nutrition of the home-based employees. Many employees in the sample declared that, because of WFH, they have the opportunity to have a proper meal and, as Medea mentioned, '*not relying on the canteen*'. However, the relation between WFH for a long period of time and gaining weight through constant access to the home fridge needs more careful attention. The point of departure for focusing on this topic was Hestia's declaration that she ate more when she worked from home but was not sure whether it was the mode of work that was to blame or her personality.

The next topic presented in this research, but again needing further investigation, is the '*problematic*' working environment (Tietze and Nadin, 2011) that WFH may help employees to avoid. The starting point for mentioning this

topic was Hestia's comment about her past experience of working in both 'good' and 'bad' office environments. This comment made the researcher realise the existence of another aspect of the phenomenon which he did not initially plan to examine, but which was unveiled through discussion with the CRAs. Theoretically, WFH may offer an escape from a problematic working reality where a problematic office situation is not something rare in the British workplace. According to the 2010 TUC safety representatives survey, 33 per cent of safety representatives recognise a problem of bullying at their workplace, whilst according to CIPD, one fifth of all UK employees have experienced bullying or harassment over the last two years (Trades Union Congress, 2015b). Furthermore, it is important to highlight that, according to Kivimäki et al. (2000), workplace bullying is linked to increased absenteeism (i.e. sick leave). Although there is no evidence from this study that Garden's employees have experienced any type of bullying or harassment, Hestia's comment about her past experience of working at '*bad offices with bad people*' ignited the researcher's brain to include the link between WFH and bullying and harassment in the list of topics that need to be further investigated. The next topic that needs to be further researched is the use of ICT.

The main concern identified from that part of the research which studied technological issues concerned security. As Poseidon, Garden's Trials System Executive, explained, the constant WiFi access of CRAs' laptops exposed data to a higher risk than did the use of a stable PC linked by an Ethernet cable. However, it is not clear which is the riskiest approach concerning data security – keeping all machines in a specific location but maximising the harm in case of a physical or electronic attack, or promoting the diaspora of the machines and at

the same time reducing the spread of danger in case of an external threat. It is important to prioritise whether emphasis needs to be put on the avoidance or the cure of the problem, on building electronic shields of protection or securing data that are not useful or recognisable to unauthorised users even if they are stolen. It is important to understand the needs of the organisation that WFH has to answer and the potential threats of keeping devices away from the central workplace to prepare a suitable training plan for remote users on data security. It is important to remind the reader that, despite the existence of any advanced security system, it is well known that usually people are the weakest link when it comes to breaches of security systems (Schneier, 2000; Pyöriä, 2011).

Another issue on the IT agenda needing further investigation is the organisation's ability to extend and support a higher number of remote workers. To be precise, Olympus is an organisation which has an IT department which supports more than 5,000 employees, but only few of them (i.e. Garden's employees) are working permanently from home. In a futurist scenario, where a greater number of employees would work from home, there may be a need for changing the organisation's SOPs, advancing the technological infrastructure, and training staff who work from home as well as staff who stay back in the office etc. These changes would need some time and resources which may not be available in the organisation. It is clear that the part of the research related to IT contains topics which need further research as any change in the technological factor may have enormous effects on both employees and employer.

In both the Literature Review and Discussion chapters, the current problematic austerity-led environment, in which organisations, mainly public, operate, was

highlighted. Although the financial benefits for both employees and Garden that WFH may offer was presented, there is a need for a more in-depth analysis of how employees and organisations' mind-sets are influenced by the current economic situation. There is a need to examine the influence of the stagnant economic environment on organisations' strategic decisions which may include the implementation of flexible working arrangements such as WFH.

Finally, it is important to mention that the list of further research issues identified in this section was the result of analysing themes which were identified from the discussion with participants without the researcher having initially scheduled to focus on them. For example, the bad working environment that home-based employees may avoid, the isolation and loneliness that CRAs feel when working alone at home, or the nutrition habits that change as a result of staying for a significantly longer period of the day at home, were topics that the researcher had not planned to discuss with the participants. Generally, it cannot be stated that the list of topics which need further research is exhausted. In particular, the five categories of the CRAs' reality of work which were examined in this research covered a significantly large part of the existing literature of WFH and, as a result, many of the findings may be used as a springboard for future studies. WFH and its various themes will continue to concern a large number of social scientists in the future where technological changes, globalisation and austerity-led economics will play a significant role in the creation of new topics on the WFH agenda. As mentioned earlier, for the next 20 years, future researchers – based on the existing large range of topics and the various globalised working environments – may easily claim that they conduct

exploratory research in an effort to map further professions or sectors or countries using the WFH insight.

References

- ACKROYD, S. and KARLSSON, J. C. (2014) Critical Realism, Research techniques, and Research Designs. In: EDWARDS, P. K., MAHONEY, J. O. and VINCENT, S. (Eds.) *Studying Organizations Using Critical Realism: A Practical Guide*. Oxford: Oxford University Press, pp. 21-45.
- ADAMS-WRIGHT, M. (2013) Mobile and remote working. In: *Mobile and remote working: data protection, workforce challenges and competitive advantage*. London: Westminster eForum, pp. 46-50.
- ADAMS, J. S. (1965) Inequality in social exchange. In: BERKOWITZ, L. (Ed.) *Advances in experimental social psychology*. Vol. 2. New York: Academic Press, pp. 267-299.
- AGCAS (2014) *Clinical Research Associate: Salary and conditions*. Available from: http://www.prospects.ac.uk/clinical_research_associate_salary.htm (Accessed 09/05/2015).
- ALDERFER, C. P. (1969) An empirical test of a new theory of human needs. *Organizational Behavior and Human Performance*, 4 (2), 142-175.
- ALEXANDER, B., DIJST, M. and ETTEMA, D. (2010) Working from 9 to 6? An analysis of in-home and out-of-home working schedules. *Transportation*, 37 (3), 505-523.
- ALIS, D., KARSTEN, L. and LEOPOLD, J. (2006) From Gods to Goddesses: Horai management as an approach to coordinating working hours. *Time & Society*, 15 (1), 81-104.
- ALLEN, S. and WOLKOWITZ, C. (1987) *Homeworking: Myths and Realities*. Basingstoke: Macmillan Education Ltd.
- ALLEN, T. D., JOHNSON, R. C., KIBURZ, K. M. and SHOCKLEY, K. M. (2013) Work–Family Conflict and Flexible Work Arrangements: Deconstructing Flexibility. *Personnel Psychology*, 66 (2), 345-376.
- ALLISON, G. T. (1971) *Essence of Decision: Explaining the Cuban Missile Crisis*. Boston: Little, Brown and Company.
- ALTAVILLA, A., GIAQUINTO, C., GIOCANTI, D., MANFREDI, C., ABOULKER, J. P., BARTOLONI, F., CATTANI, E., LO GIUDICE, M., PEÑA, M. J. M.,

- NAGLER, R., PETERSON, C., VAJNEROVA, O., BONIFAZI, F. and CECI, A. (2009) Activity of Ethics Committees in Europe on issues related to clinical trials in paediatrics: Results of a survey. *Pharmaceuticals Policy & Law*, 11 (1/2), 79-87.
- AMMONS, S. K. and MARKHAM, W. T. (2004) Working at Home: Experiences of Skilled White Collar Workers *Sociological Spectrum*, 24 (2), 191-238.
- ANDERSON, A. J., KAPLAN, S. A. and VEGA, R. P. (2015) The impact of telework on emotional experience: When, and for whom, does telework improve daily affective well-being? *European Journal of Work & Organizational Psychology*, 24 (6), 882-897.
- ANDERSON, D. and KELLIHER, C. (2009) Flexible working and engagement: the importance of choice. *Strategic HR Review*, 8 (2), 13-18.
- ANNAS, G. J. and GRODIN, M. A. (2008) The Nuremberg Code. In: EMANUEL, E. J., GRADY, C., CROUCH, R. A., LIE, R. K., MILLER, F. G. and WENDLER, D. (Eds.) *The Oxford Textbook of Clinical Research Ethics*. Oxford: Oxford University Press, pp. 136-140.
- ARMSTRONG, M. (2010) *Armstrong's Handbook of Reward Management Practice: Improving performance through reward*. 3rd ed. London: Kogan Page.
- ARMSTRONG, N. J. D. F. (1999) Flexible Work in the Virtual Workplace: Discourses and Implications of Teleworking. In: FELSTEAD, A. and JEWSON, N. (Eds.) *Global Trends in Flexible Labour*. London: Macmillan Press Ltd, pp. 43-61.
- ARNOLD, J. T. (2006) Making The Leap. *HR Magazine*, 51 (5), 80-86.
- ARRAS, J. D. (2008) The Jewish Chronic Disease Hospital Case. In: EMANUEL, E. J., GRADY, C., CROUCH, R. A., LIE, R. K., MILLER, F. G. and WENDLER, D. (Eds.) *The Oxford Textbook of Clinical Research Ethics*. Oxford: Oxford University Press, pp. 73-79.
- ASHCROFT, R. E. (2008) The Declaration of Helsinki. In: EMANUEL, E. J., GRADY, C., CROUCH, R. A., LIE, R. K., MILLER, F. G. and WENDLER, D. (Eds.) *The Oxford Textbook of Clinical Research Ethics*. Oxford: Oxford University Press, pp. 141-148.
- ATKINSON, C. and HALL, L. (2011) Flexible working and happiness in the NHS. *Employee Relations*, 33 (2), 88-105.

- AUSTOKER, J. and BRYDER, L. (1989) Preface. In: AUSTOKER, J. and BRYDER, L. (Eds.) *Historical Perspectives on the Role of the MRC: essays in the history of the Medical Research Council of the United Kingdom and its predecessor, the Medical Research Committee, 1913-1953*. Oxford: Oxford University Press, pp. v-vii.
- BACON, F. (1853) *Novum organum. In Physical and metaphysical works of Lord Bacon*. Vol. 1 London: H. G. Bohn.
- BAILEY, D. E. and KURLAND, N. B. (2002) A Review of Telework Research: Findings, New Directions, and Lessons for the Study of Modern Work. *Journal of Organizational Behavior*, 23 (4), 383-400.
- BAKER, E., AVERY, G. C. and CRAWFORD, J. (2007) Satisfaction and Perceived Productivity when Professionals Work from Home. *Research & Practice in Human Resource Management*, 15 (1), 37-62.
- BAKER, P. M. A., MOON, N. W. and WARD, A. C. (2006) Virtual exclusion and telework: Barriers and opportunities of technocentric workplace accommodation policy. *Work*, 27 (4), 421-430.
- BARNETT, R. C. (1998) Toward a review and reconceptualization of the work/family literature. *Genetic, Social, and General Psychology Monographs*, 124 (2), 125-182.
- BEGG, D., VERNASCA, G., FISCHER, S. and DORNBUSCH, R. (2014) *Economics*. 11th ed. Maidenhead: McGraw-Hill Education.
- BEHAM, B., BAIERL, A. and POELMANS, S. (2014) Managerial telework allowance decisions – a vignette study among German managers. *The International Journal of Human Resource Management*, 26 (11), 1385-1406.
- BELANGER, F., COLLINS, R. W. and CHENEY, P. H. (2001) Technology Requirements and Work Group Communication for Telecommuters. *Information Systems Research*, 12 (2), 155.
- BELLE, S. M., BURLEY, D. L. and LONG, S. D. (2014) Where do I belong? High-intensity teleworkers' experience of organizational belonging. *Human Resource Development International*, 18 (1), 76-96.
- BEN-GAN, I., KOLLAR, L. and SARKA, D. (2006) *Inside Microsoft SQL Server 2005: T-SQL Querying*. Redmond: Microsoft Press.

- BENKO, C. and WEISBERG, A. (2007) *Mass Career Customization: Aligning the workplace with today's nontraditional workforce*. Boston: Harvard Business School Press.
- BHASKAR, R. (1986) *Scientific Realism and Human Emancipation*. London: Verso.
- BHASKAR, R. (1994) *Plato Etc.: The Problems of Philosophy and Their Resolution*. London: Verso.
- BHASKAR, R. (2008) *A Realist Theory of Science*. London: Verso.
- BIANCHI, S. M. and RALEY, S. B. (2005) Time Allocation in Families. In: BIANCHI, S., CASPER, L. M. and KING, R. B. (Eds.) *Work, Family, Health, and Well-Being*. New York: Routledge, pp. 21-42.
- BIANCHI, S. M. and WIGHT, V. R. (2010) The Long Reach of the Job: Employment and Time for Family Life. In: CHRISTENSEN, K. and SCHNEIDER, B. (Eds.) *Workplace Flexibility: Realigning 20th-Century Jobs for a 21st-Century Workforce*. New York: Cornell University Press, pp. 17-42.
- BLACKSHER, E. and MORENO, J. D. (2008) A History of Informed Consent in Clinical Research. In: EMANUEL, E. J., GRADY, C., CROUCH, R. A., LIE, R. K., MILLER, F. G. and WENDLER, D. (Eds.) *The Oxford Textbook of Clinical Research Ethics*. Oxford: Oxford University Press, pp. 591-605.
- BLANPAIN, R. (2007a) Implementation of the European Framework Agreement on Telework: Report by the European Social Partners, Adopted by the Social Dialogue Committee on 28 June 2006. In: BLANPAIN, R. (Ed.) *European Framework Agreements and Telework: Law and Practice, A European and Comparative Study*. Alphen aan den Rijn: Kluwer Law International, pp. 37-69.
- BLANPAIN, R. (2007b) Belgium. In: BLANPAIN, R. (Ed.) *European Framework Agreements and Telework: Law and Practice, A European and Comparative Study*. Alphen aan den Rijn: Kluwer Law International, pp. 89-102.
- BLAXTER, L., HUGHES, C. and TIGHT, M. (2006) *How to Research*. 3rd ed. Maidenhead: Open University Press McGraw-Hill Education.
- BLOOM, N., LIANG, J., ROBERTS, J. and YING, Z. J. (2015) Does Working from Home Work? Evidence from a Chinese Experiment. *The Quarterly Journal of Economics*, 130 (1), 165-218.

- BODDY, D. (2014) *Management: An Introduction*. 6th ed. Harlow: Pearson Education Limited.
- BOURHIS, A. and MEKKAOU, R. (2010) Beyond Work-Family Balance: Are Family-Friendly Organizations More Attractive? *Relations Industrielles*, 65 (1), 98-117.
- BRATTON, J. and GOLD, J. (2012) *Human Resource Management: Theory and Practice*. Basingstoke: Palgrave Macmillan.
- BREWIN, B. (2012) Demonstrating Telework's Value. *Government Executive*, 44 (13), 31-31.
- BRODT, T. L. and VERBURG, R. M. (2007) Managing mobile work—insights from European practice. *New Technology, Work & Employment*, 22 (1), 52-65.
- BROWN, A. and ROBERTS, J. M. (2014) An Appraisal of the Contribution of Critical Realism to Qualitative and Quantitative Research Methodology. Is Dialectics the Way Forward? In: EDWARDS, P. K., O'MAHONEY, J. and VINCENT, S. (Eds.) *Studying Organizations Using Critical Realism: A Practical Guide*. Oxford: Oxford University Press, pp. 300-317.
- BRUMMELHUIS, L. L., HOEVEN, C. L., JONG, M. D. T. and PEPPER, B. (2013) Exploring the linkage between the home domain and absence from work: Health, motivation, or both? *Journal of Organizational Behavior*, 34 (3), 273-290.
- BRYMAN, A. (2001) Introduction. In: BRYMAN, A. (Ed.) *Ethnography*. (Sage Benchmarks in Research Methods) Vol. I. London: Sage, pp. ix-xxxix.
- BRYMAN, A. (2012) *Social research methods*. 4th ed. Oxford: Oxford University Press.
- CAILLIER, J. G. (2014) Do Role Clarity and Job Satisfaction Mediate the Relationship between Telework and Work Effort? *International Journal of Public Administration*, 37 (4), 193-201.
- CALZADA, J. and MARTÍNEZ-SANTOS, F. (2014) Broadband prices in the European Union: Competition and commercial strategies. *Information Economics and Policy*, 27, 24-38.
- CARLSON, D. S., GRZYWACZ, J. G. and ZIVNUSKA, S. (2009) Is work-family balance more than conflict and enrichment? *Human Relations*, 62 (10), 1459.
- CARR, J., CHADWICK, D., EARDLEY, W. and PAGE, P. (2012a) Research Design. In: PAGE, P., CARR, J., EARDLEY, W., CHADWICK, D. and PORTER,

- K. (Eds.) *An introduction to clinical research*. (Success in Medicine Series) Oxford: Oxford University Press, pp. 53-86.
- CARR, J., CHADWICK, D., SHAH, A., MACDOUGALL, K. and WELSH, S. (2012b) Types of Research. In: PAGE, P., CARR, J., EARDLEY, W., CHADWICK, D. and PORTER, K. (Eds.) *An Introduction to Clinical Research*. (Success in Medicine) Oxford: Oxford University Press, pp. 13-52.
- CASCIO, W. F. (2000) Managing a virtual workplace. *Academy of Management Executive*, 14 (3), 81-90.
- CHALMERS, L. (2008) Using IT in work at home: taking a closer look at IT use in home-located production. *New Technology, Work & Employment*, 23 (1/2), 77-94.
- CHARMAZ, K. (2005) Grounded Theory in the 21st Century: Applications for Advancing Social Justice Studies. In: DENZIN, N. K. and LINCOLN, Y. S. (Eds.) *The Sage Handbook of Qualitative Research*. 3rd ed. Thousand Oaks: SAGE Publications, Inc, pp. 507-535.
- CHURCH, N. F. (2015) Gauging Perceived Benefits from 'Working from Home' as a Job Benefit. *International Journal of Business & Economic Development*, 3 (3), 81-89.
- CLARK, L. A., KARAU, S. J. and MICHALISIN, M. D. (2012) Telecommuting Attitudes and the 'Big Five' Personality Dimensions. *Journal of Management Policy & Practice*, 13 (3), 31-46.
- CLARK, M. A. (2000) *Teleworking in the Countryside: Home-based working in the information society*. Aldershot: Ashgate.
- CLEAR, F. and DICKSON, K. (2005) Teleworking practice in small and medium-sized firms: management style and worker autonomy. *New Technology, Work and Employment*, 20 (3), 218-233.
- COENEN, M. and KOK, R. A. W. (2014) Workplace flexibility and new product development performance: The role of telework and flexible work schedules. *European Management Journal*, 32 (4), 564-576.
- COLLIER, A. (1994) *Critical Realism: An Introduction to Roy Bhaskar's Philosophy*. London: Verso.
- COLLINS, M. (2005) The (not so simple) case for teleworking: a study at Lloyd's of London. *New Technology, Work and Employment*, 20 (2), 115-132.

- COOK, A. and HOAS, H. (2015) Exploring the Potential for Moral Hazard When Clinical Trial Research is Conducted in Rural Communities: Do Traditional Ethics Concepts Apply? *HEC Forum*, 27 (2), 171-187.
- COOK, J., NUCCITELLI, D., GREEN, S. A., RICHARDSON, M., WINKLER, B., PAINTING, R., WAY, R., JACOBS, P. and SKUCE, A. (2013) Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters*, 8 (2), 024024.
- COOKE, G. B., CHOWHAN, J. and COOPER, T. (2014) Dialing it in: A Missed Opportunity Regarding the Strategic Use of Telework? *Industrial Relations*, 69 (3), 550-574.
- COURT OF JUSTICE OF THE EUROPEAN UNION (2015) *Press Release No 99/15, Judgment in Case C-266/14: The journeys made by workers without fixed or habitual place of work between their homes and the first and last customer of the day constitute working time.* Luxembourg: Court of Justice of the European Union. Available from: <http://curia.europa.eu/jcms/upload/docs/application/pdf/2015-09/cp150099en.pdf> (Accessed 10/09/2015).
- CRABTREE, A., ROUNCEFIELD, M. and TOLMIE, P. (2012) *Doing Design Ethnography.* (Human-Computer Interaction Series) London: Springer.
- CRESWELL, J. W. (2009) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* 3rd ed. New Delhi: SAGE Publications India Pvt Ltd.
- CRESWELL, J. W. (2013) *Qualitative Inquiry & Research Design: Choosing Among Five Approaches.* 3rd ed. Thousand Oaks: SAGE Publications, Inc.
- DAHLSTROM, T. R. (2013) Telecommuting and Leadership Style. *Public Personnel Management*, 42 (3), 438-451.
- DAVENPORT, T. H. and PEARLSON, K. (1998) Two Cheers for the Virtual Office. *Sloan Management Review*, 39 (4), 51-65.
- DAY, S. and EDERER, F. (2004) Brief History of Clinical Trials. In: MACHIN, D., DAY, S. and GREEN, S. (Eds.) *Textbook of Clinical Trials.* Chichester: John Wiley & Sons Ltd, pp. 1-9.
- DE BORGER, B. and WUYTS, B. (2011) The structure of the labor market, telecommuting, and optimal peak period congestion tolls: A numerical optimization model. *Regional Science & Urban Economics*, 41 (5), 426-438.

- DE MENEZES, L. M. and KELLIHER, C. (2011) Flexible Working and Performance: A Systematic Review of the Evidence for a Business Case. *International Journal of Management Reviews*, 13 (4), 452-474.
- DENZIN, N. (1970) *The Research Act: A Theoretical Introduction to Sociological Methods*. Chicago: Aldine Publishing Company.
- DENZIN, N. and LINCOLN, Y. (2011) Introduction: The Discipline and Practice of Qualitative Research. In: DENZIN, N. and LINCOLN, Y. (Eds.) *The SAGE Handbook of Qualitative Research*. 4th ed. Thousand Oaks: SAGE Publications, Inc, pp. 1-20.
- DEPARTMENT FOR EDUCATION (2014) *Statutory framework for the early years foundation stage: Setting the standards for learning, development and care for children from birth to five*. UK: Crown. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335504/EYFS_framework_from_1_September_2014_with_clarification_note.pdf (Accessed 10/09/2016).
- DERKS, D. and BAKKER, A. B. (2014) Smartphone Use, Work–Home Interference, and Burnout: A Diary Study on the Role of Recovery. *Applied Psychology*, 63 (3), 411-440.
- DERKS, D., VAN DUIN, D., TIMS, M. and BAKKER, A. B. (2015) Smartphone use and work–home interference: The moderating role of social norms and employee work engagement. *Journal of Occupational and Organizational Psychology*, 88 (1), 155-177.
- DI MARTINO, V. and WIRTH, L. (1990) Telework: A new way of working and living. *International Labour Review*, 129 (5), 529.
- DIMITROVA, D. (2003) Controlling teleworkers: supervision and flexibility revisited. *New Technology, Work & Employment*, 18 (3), 181.
- DONNELLY, N. and PROCTOR-THOMSON, S. B. (2015) Disrupted work: home-based teleworking (HbTW) in the aftermath of a natural disaster. *New Technology, Work & Employment*, 30 (1), 47-61.
- DOUGLAS, M. (2011) PROTECTING HOME WORKERS. *Government News*, 31 (6), 16-16.
- DREDGE, S. (2015) *Why the workplace of 2016 could echo Orwell's 1984*. London: Guardian. Available from:

<http://www.theguardian.com/technology/2015/aug/23/data-and-tracking-devices-in-the-workplace-amazon> (Accessed 25/10/2015).

DUTCHER, E. G. (2012) The effects of telecommuting on productivity: An experimental examination. The role of dull and creative tasks. *Journal of Economic Behavior & Organization*, 84 (1), 355-363.

DUXBURY, L. and HALINSKI, M. (2014) When more is less: An examination of the relationship between hours in telework and role overload. *Work*, 48 (1), 91-103.

DUXBURY, L. and HIGGINS, C. (2002) Telework: A Primer for the Millenium Introduction. In: COOPER, C. L. and BURKE, R. J. (Eds.) *The New World of Work: Challenges and Opportunities*. Oxford: Blackwell Publishers Ltd, pp. 157-199.

DYMOND, J. and MURLIS, H. (2009) Executive Rewards - 'don't you just give them loads of money?'. In: CORBY, S., PALMER, S. and LINDOP, E. (Eds.) *Rethinking Reward*. Basingstoke: Palgrave Macmillan, pp. 157-180.

EDWARDS, L. N. and FIELD-HENDREY, E. (2002) Home-Based Work and Women's Labor Force Decisions. *Journal of Labor Economics*, 20 (1), 170.

EDWARDS, P. K., O'MAHONEY, J. and VINCENT, S. (2014) *Studying Organizations Using Critical Realism: A Practical Guide*. Oxford: Oxford University Press.

ELDERS, F., CHOMSKY, N. and FOUCAULT, M. (2011) *Human Nature: Justice Vs Power - The Chomsky-Foucault Debate*. London: Souvenir Press.

ELLISON, J. K. (2012) Ergonomics for Telecommuters: And Other Remote Workers. *Professional Safety*, 57 (6), 86-90.

EMANUEL, E. J., GRADY, C., CROUCH, R. A., LIE, R. K., MILLER, F. G. and WENDLER, D. (2008) *The Oxford Textbook of Clinical Research Ethics*. Oxford: Oxford University Press.

EUROPA (2005) *Teleworking*. Available from: http://europa.eu/legislation_summaries/employment_and_social_policy/employment_rights_and_work_organisation/c10131_en.htm (Accessed 12/06/2016).

EUROPEAN COMMISSION (1998) *Status Report on European Telework: Telework 98*. Luxembourg: Office for Official Publications of the European Communities.

EUROPEAN MEDICINES AGENCY (2015) *EudraCT Public Web Report for July 2015*. London: European Medicines Agency. Available from: https://eudract.ema.europa.eu/docs/statistics/EudraCT_Statistics_2015/EudraCT_Public_Report_July_2015.pdf (Accessed 12/09/2015).

FAHLÉN, S. (2014) Does gender matter? Policies, norms and the gender gap in work-to-home and home-to-work conflict across Europe. *Community, Work & Family*, 17 (4), 371-391.

FELSTEAD, A. and JEWSON, N. (2000) *In Work, At Home: Towards an understanding of homeworking*. London: Routledge.

FELSTEAD, A., JEWSON, N. and GOODWIN, J. (1996) *Homeworkers in Britain*. London: HMSO.

FELSTEAD, A., JEWSON, N., PHIZACKLEA, A. and WALTERS, S. (2001) Working at home: statistical evidence for seven key hypotheses. *Work, employment and society*, 15 (2), 215-231.

FELSTEAD, A., JEWSON, N., PHIZACKLEA, A. and WALTERS, S. (2002) The option to work at home: another privilege for the favoured few? *New Technology, Work & Employment*, 17 (3), 204.

FELSTEAD, A., JEWSON, N. and WALTERS, S. (2003) Managerial Control of Employees Working at Home. *British Journal of Industrial Relations*, 41 (2), 241-264.

FELSTEAD, A., JEWSON, N. and WALTERS, S. (2005) *Changing Places of Work*. Basingstoke: Palgrave Macmillan.

FLICK, U. (2009) *An Introduction to Qualitative Research*. 4th ed. London: SAGE Publications.

FLYVBJERG, B. (2011) Case Study. In: DENZIN, N. K. and LINCOLN, Y. S. (Eds.) *The Sage Handbook of Qualitative Research*. 4th ed. Thousand Oaks: Sage, pp. 301-316.

FONNER, K. L. and STACHE, L. C. (2012) All in a day's work, at home: teleworkers' management of micro role transitions and the work-home boundary. *New Technology, Work and Employment*, 27 (3), 242-257.

FOOT, M. and HOOK, C. (2011) *Introducing Human Resource Management*. Harlow: Pearson Education Limited.

FURNELL, S. (2006) Securing the home worker. *Network Security*, 2006 (11), 6-12.

- GAJENDRAN, R. S. and HARRISON, D. A. (2007) The Good, the Bad, and the Unknown About Telecommuting: Meta-Analysis of Psychological Mediators and Individual Consequences. *Journal of Applied Psychology*, 92 (6), 1524-1541.
- GAJENDRAN, R. S., HARRISON, D. A. and DELANEY-KLINGER, K. (2015) Are Telecommuters Remotely Good Citizens? Unpacking Telecommuting's Effects on Performance Via I-Deals and Job Resources. *Personnel Psychology*, 68 (2), 353-393.
- GARRETT, R. K. and DANZIGER, J. N. (2007) Which Telework? Defining and Testing a Taxonomy of Technology-Mediated Work at a Distance. *Social Science Computer Review*, 25 (1), 27-47.
- GEORGE BERNARD SHAW (1919) *Annajanska, the Bolshevik Empress*. Available from: http://archive.org/stream/shorterplays007012mbp/shorterplays007012mbp_djvu.txt
- GERRING, J. (2008) *Case Study Research: Principles and Practices*. Cambridge: Cambridge University Press.
- GIBSON, B. and HARTMAN, J. (2014) *Rediscovering Grounded Theory*. London: Sage.
- GILLHAM, B. (2000) *Real World Research: Case Study Research Methods*. London: Continuum.
- GLASER, B. and STRAUSS, A. (1967) *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Piscataway: AldineTransaction.
- GLENNY, H. and SMITH, A. E. (2013) *The ICR Guide to Freelancing*. 4th ed. Maidenhead: The Institute of Clinical Research.
- GOLDEN, L. (2008) Limited Access: Disparities in Flexible Work Schedules and Work-at-home. *Journal of Family and Economic Issues*, 29 (1), 86-109.
- GOLDEN, T. (2007) Co-workers who telework and the impact on those in the office: Understanding the implications of virtual work for co-worker satisfaction and turnover intentions. *Human Relations*, 60 (11), 1641-1667.
- GOLDEN, T. (2012) Altering the Effects of Work and Family Conflict on Exhaustion: Telework During Traditional and Nontraditional Work Hours. *Journal of Business & Psychology*, 27 (3), 255-269.

- GOLDEN, T. D. (2006) Avoiding depletion in virtual work: Telework and the intervening impact of work exhaustion on commitment and turnover intentions. *Journal of Vocational Behavior*, 69 (1), 176-187.
- GOLDEN, T. D. and FROMEN, A. (2011) Does it matter where your manager works? Comparing managerial work mode (traditional, telework, virtual) across subordinate work experiences and outcomes. *Human Relations*, 64 (11), 1451-1475.
- GOLDEN, T. D. and SCHOENLEBER, A. H. W. (2014) Toward a deeper understanding of the willingness to seek help: The case of teleworkers. *Work*, 48 (1), 83-90.
- GOMM, R. (2004) *Social Research Methodology: A Critical Introduction*. Basingstoke: Palgrave Macmillan
- GOODIN, R. E., RICE, J. M., PARPO, A. and ERIKSSON, L. (2008) *Discretionary time: a new measure of freedom*. New York: Cambridge University Press.
- GOOGLE (2016) *Company Overview*. Available from: <http://www.google.co.uk/about/company/> (Accessed 07/03/2016).
- GREEN, F. (2004) Work Intensification, Discretion, and the Decline in Well-Being at Work *Eastern Economic Journal*, 30 (4), 615-625.
- GREEN, J. and THOROGOOD, N. (2004) *Qualitative Methods for Health Research*. London: Sage.
- GREENHILL, A. and WILSON, M. (2006) Haven or hell? Telework, flexibility and family in the e-society: a Marxist analysis. *European Journal of Information Systems*, 15 (4), 379-388.
- GREINER, L. E. (1998) Evolution and Revolution as Organizations Grow. *Harvard Business Review*, 76 (3), 55-68.
- GRUBER, H., HÄTÖNEN, J. and KOUTROUMPIS, P. (2014) Broadband access in the EU: An assessment of future economic benefits. *Telecommunications Policy*, 38 (11), 1046-1058.
- GUTHRIE, G. (2010) *Basic Research Methods: An Entry to Social Science Research*. New Delhi: SAGE Publications India Pvt Ltd.
- HACKMAN, J. R. and OLDFHAM, G. R. (1975) Development of the Job Diagnostic Survey. *Journal of Applied Psychology*, 60 (2), 159-170.

- HADDON, L. and BRYNIN, M. (2005) The character of telework and the characteristics of teleworkers. *New Technology, Work & Employment*, 20 (1), 34-46.
- HALL, J. (2001) The drug development process. In: GIOVANNA, I. D. and HAYES, G. (Eds.) *The Institute of Clinical Research: Principles of Clinical Research*. Petersfield: Wrightson Biomedical Publishing Ltd, pp. 1-16.
- HARKER-MARTIN, B. and MACDONNELL, R. (2012) Is telework effective for organizations? : A meta-analysis of empirical research on perceptions of telework and organizational outcomes *Management Research Review*, 35 (7), 602-616.
- HARRINGTON, S. S. and WALKER, B. L. (2004) The effects of ergonomics training on the knowledge, attitudes, and practices of teleworkers. *Journal of Safety Research*, 35 (1), 13-22.
- HART, C. (1998) *Doing a Literature Review: Releasing the Social Science Research Imagination*. London: SAGE Publications Ltd.
- HEATHERMAN, R. and O'ROURKE, J. S. (2014) Yahoo!: A Female CEO and New Mother Forbids Working from Home. *Journal of Organizational Behavior Education*, 7, 65-78.
- HEDGECOE, A. (2014) A deviation from standard design? Clinical trials, research ethics committees, and the regulatory co-construction of organizational deviance. *Social Studies of Science (Sage Publications, Ltd.)*, 44 (1), 59-81.
- HERPER, M. (2011) *The Most Innovative Countries in Biology and Medicine*. Forbes. Available from: <http://www.forbes.com/sites/matthewherper/2011/03/23/the-most-innovative-countries-in-biology-and-medicine/2/> (Accessed 22/11/2015).
- HERZBERG, F. (1968) One more time: How do you motivate employees? *Harvard Business Review*, 46 (1), 53-62.
- HILBRECHT, M., SHAW, S. M., JOHNSON, L. C. and ANDREY, J. (2008) 'I'm Home for the Kids': Contradictory Implications for Work–Life Balance of Teleworking Mothers. *Gender, Work & Organization*, 15 (5), 454-476.
- HILBRECHT, M., SHAW, S. M., JOHNSON, L. C. and ANDREY, J. (2013) Remixing work, family and leisure: teleworkers' experiences of everyday life. *New Technology, Work & Employment*, 28 (2), 130-144.

- HISLOP, D. and AXTELL, C. (2007) The neglect of spatial mobility in contemporary studies of work: the case of telework. *New Technology, Work & Employment*, 22 (1), 34-51.
- HISLOP, D., AXTELL, C. and DANIELS, K. (2008) The Challenge of Remote Working. In: CARTWRIGHT, S. and COOPER, C. L. (Eds.) *The Oxford Handbook of Personnel Psychology*. New York: Oxford University Press Inc., pp. 564-587.
- HOBBSAWM, E. (1996a) *The Age of Extremes: A History of the World, 1914 - 1991*. New York: Vintage Books.
- HOBBSAWM, E. (1996b) *The Age of Revolution: 1789 - 1848*. New York: Vintage Books.
- HOCHSCHILD, A. R. (2001) *The Time Bind: When Work Becomes Home and Home Becomes Work*. 2nd ed. New York: Henry Holt and Company.
- HOFSTEDE, G. (1994) *Cultures and Organizations, Software of the Mind: Intercultural Cooperation and its Importance for Survival*. London: HarperCollinsBusiness.
- HOFSTEDE, G., HOFSTEDE, G. J. and MINKOV, M. (2010) *Cultures and Organizations, Software of the Mind: Intercultural Cooperation and its Importance for Survival*. New York: McGraw-Hill.
- HOLDSWORTH, R. (2011) *London Transport Fares 2000-2016*. London: Londonist. Available from: <https://londonist.com/2011/11/london-transport-fares-2000-2012> (Accessed 11/09/2016).
- HOLLYFORDE, S. and WHIDDETT, S. (2002) *The motivation handbook*. London: CIPD.
- HOLT, H. and THAULOW, I. (1996) Formal and informal flexibility in the workplace. In: LEWIS, S. and LEWIS, J. (Eds.) *The Work Family Challenge: Rethinking Employment*. London: Sage, pp. 79-92.
- HUNTINGTON, S. P. (2002) *The Clash of Civilizations and the Remaking of World Order*. London: Free Press.
- HUNTON, J. E. and NORMAN, C. S. (2010) The Impact of Alternative Telework Arrangements on Organizational Commitment: Insights from a Longitudinal Field Experiment. *Journal of Information Systems*, 24 (1), 67-90.

- HUTCHINSON, D. S. (1994) Introduction. In: INWOOD, B. and GERSON, L. P. (Eds.) *The Epicurus Reader: Selected Writings and Testimonia*. Indianapolis: Hackett Publishing Company, Inc, pp. vii-xvi.
- HUWS, U. (1994) *Teleworking in Britain*. (Employment Department Research Series 18) Sheffield: Employment Department.
- IBM (2015) *Supporting Alternate Employee Commute Options*. Available from: <http://www.ibm.com/ibm/environment/climate/commuting.shtml> (Accessed 25/08/2015).
- ILLINGWORTH, J. (2001) Monitoring. In: GIOVANNA, I. D. and HAYES, G. (Eds.) *The Institute of Clinical Research: Principles of Clinical Research*. Petersfield: Wrightson Biomedical Publishing Ltd, pp. 247-262.
- INTERNATIONAL CONFERENCE ON HARMONISATION OF TECHNICAL REQUIREMENTS FOR REGISTRATION OF PHARMACEUTICALS FOR HUMAN USE (1996) *Guideline for Good Clinical Practice E6 (R1)*. Somerset West: International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use. Available from: [http://www.ich.org/fileadmin/Public Web Site/ICH Products/Guidelines/Efficacy /E6/E6 R1 Guideline.pdf](http://www.ich.org/fileadmin/Public%20Web%20Site/ICH_Products/Guidelines/Efficacy/E6/E6_R1_Guideline.pdf) (Accessed 12/09/2015).
- JAAKSON, K. and KALLASTE, E. (2010) Beyond flexibility: reallocation of responsibilities in the case of telework New Technology, Work and Employment Telework and change of responsibilities. *New Technology, Work & Employment*, 25 (3), 196-209.
- JENKINS, S. (2012) *A Short History of England*. London: Profile Books Ltd.
- JOHN LEWIS (2015) Available from: <http://www.johnlewis.com/asus-eeebook-x205ta-laptop-intel-atom-2gb-ram-32gb-ssd-11-6-/p1763214?colour=Black>
- JOHNSON, T. P. (2014) *Handbook of Health Survey Methods*. Hoboken: Wiley.
- JOICE, W. and VERIVE, J. (2006) Telework and Federal Employee Dependent Care. *Public Manager*, 35 (3), 44-49.
- JONES, O. (2011) *Chavs: The Demonization of the Working Class*. London: Verso.
- KALFAS, V. (2007) *Aristotle about Nature (Αριστοτέλης Περί Φύσεως)*. 5th ed. Athens: POLIS (ΠΟΛΙΣ).
- KAMERADE, D., PETERS, P., RICHARDSON, H., SALMINEN, M. and SHARIFI, S. (2013) 'Backshoring' Home: Developments in Home-Based

Teleworking (HbTW) in the European Labour Market. *Proceedings of the European Conference on Information Management & Evaluation*, 261-264.

KANTOR, P. (2003) Women's Empowerment Through Home-based Work: Evidence from India. *Development & Change*, 34 (3), 425-445.

KELLIHER, C. (2013) Flexibility. In: WILKINSON, A. and REDMAN, T. (Eds.) *Contemporary Human Resource Management: Text and Cases*. Harlow: Pearson education Limited, pp. 578-598.

KELLIHER, C. and ANDERSON, D. (2008) For Better or for Worse? An Analysis of how Flexible Working Practices Influence Employees' Perceptions of Job Quality. *The International Journal of Human Resource Management*, 19 (3), 419-431.

KEYNES, J. M. (1964) *The General Theory of Employment, Interest, and Money*. New York: Harcourt, Inc.

KINKEL, S. (2012) Trends in production relocation and backshoring activities. *International Journal of Operations & Production Management*, 32 (6), 696-720.

KITOU, E. and HORVATH, A. (2003) Energy-related emissions from telework. *Environmental Science & Technology*, 37 (16), 3467-3475.

KIVIMÄKI, M., ELOVAINIO, M. and VAHTERA, J. (2000) Workplace bullying and sickness absence in hospital staff. *Occupational and Environmental Medicine*, 57 (10), 656-660.

KIVIMÄKI, M., JOKELA, M., NYBERG, S. T., SINGH-MANOUX, A., FRANSSON, E. I., ALFREDSSON, L., BJORNER, J. B., BORRITZ, M., BURR, H., CASINI, A., CLAYS, E., DE BACQUER, D., DRAGANO, N., ERBEL, R., GEUSKENS, G. A., HAMER, M., HOOFTMAN, W. E., HOUTMAN, I. L., JÖCKEL, K.-H., KITTEL, F., KNUTSSON, A., KOSKENVUO, M., LUNAU, T., MADSEN, I. E. H., NIELSEN, M. L., NORDIN, M., OKSANEN, T., PEJTERSEN, J. H., PENTTI, J., RUGULIES, R., SALO, P., SHIPLEY, M. J., SIEGRIST, J., STEPTOE, A., SUOMINEN, S. B., THEORELL, T., VAHTERA, J., WESTERHOLM, P. J. M., WESTERLUND, H., O'REILLY, D., KUMARI, M., BATTY, G. D., FERRIE, J. E. and VIRTANEN, M. (2015) Long working hours and risk of coronary heart disease and stroke: a systematic review and meta-analysis of published and unpublished data for 603,838 individuals. *The Lancet*, 386 (10005), 1739-1746.

KOLMAN, J. (2008) It's Time to Telework. *State Legislatures*, 34 (3), 16-18.

- KONZELMANN, S. J. (2014) The political economics of austerity. *Cambridge Journal of Economics*, 38 (4), 701-741.
- KOSSEK, E. E. (2005) Workplace Policies and Practices to Support Work and Families. In: BIANCHI, S. M., CASPER, L. M. and KING, R. B. (Eds.) *Work, Family, Health and Well-Being*. New York: Routledge, pp. 97-116.
- KRUGMAN, P., PAPANDREOU, G., GINGRICH, N. and LAFFER, A. (2013) *Should We Tax the Rich More? The Munk Debate on Economic Inequality*. (Munk Debates) Vol. V Toronto: Anansi.
- KRUGMAN, P., WELLS, R. and GRADDY, K. (2011) *Essentials of Economics*. 2nd ed. New York: Worth Publishers.
- KUHN, T. S. (2012) *The Structure of Scientific Revolutions*. 4th ed. Chicago: The University of Chicago Press.
- KURLAND, N. B. and BAILEY, D. E. (1999) Telework: The Advantages and Challenges of Working Here, There, Anywhere, and Anytime. *Organizational Dynamics*, 28 (2), 53-67.
- KVALE, S. (1996) *Interviews: An Introduction to Qualitative Research Interviewing*. Thousand Oaks: SAGE Publications, Inc.
- KVALE, S. and BRINKMANN, S. (2009) *Interviews: Learning the Craft of Qualitative Research Interviewing*. 2nd ed. Thousand Oaks: SAGE Publications, Inc.
- LAI, Y. and BURCHELL, B. (2008) Distributed work: communication in an 'officeless firm'. *New Technology, Work & Employment*, 23 (1/2), 61-76.
- LARI, A. (2012) Telework/Workforce Flexibility to Reduce Congestion and Environmental Degradation? *Procedia - Social and Behavioral Sciences*, 48 (0), 712-721.
- LAUTSCH, B. A., KOSSEK, E. E. and EATON, S. C. (2009) Supervisory approaches and paradoxes in managing telecommuting implementation. *Human Relations*, 62 (6), 795-827.
- LEE, M. D., HOURQUET, P. G. and MACDERMID, S. M. (2002) Reduced-Load Work Arrangments: The Changing Nature of Professional and Managerial Work. In: COOPER, C. L. and BURKE, R. J. (Eds.) *The New World of Work: Challenges and Opportunities*. Oxford: Blackwell Publishers Ltd, pp. 137-156.
- LEUNG, C. (2008) Handling teleworkers. *Canadian Business*, 81 (5), 34-34.

- LEWIS, J. (2014) *Wisdom Quotes: Paul Newman Quotes*. Available from: <http://www.wisdomquotes.com/authors/paul-newman/> (Accessed 14/02/2015).
- LEWIS, S. and DYER, J. (2002) Towards a Culture for Work-Life Integration. In: COOPER, C. L. and BURKE, R. J. (Eds.) *The New World of Work: Challenges and Opportunities*. Oxford: Blackwell Publishers Ltd, pp. 302-316.
- LEWIS, S. and ROPER, I. (2008) Flexible Working Arrangements: From Work-Life to Gender Equity Policies. In: CARTWRIGHT, S. and COOPER, C. L. (Eds.) *The Oxford Handbook of Personnel Psychology*. New York: Oxford University Press Inc, pp. 413-437.
- LIMBURG, D. and JACKSON, P. J. (2007) Teleworkflow: supporting remote control with Workflow Management Systems. *New Technology, Work and Employment*, 22 (2), 146-167.
- LINKEDIN (2016) *About us*. Available from: <https://www.linkedin.com/about-us?trk=uno-reg-quest-home-about> (Accessed 07/03/2016).
- LITTLER, C. R. (1982) *The Development of the Labour Process in Capitalist Societies*. London: Heinemann Educational Books.
- LONDON UNDERGROUND AND NETWORK SOUTHEAST (1993) *One Day Travelcards*. Available from: http://3.bp.blogspot.com/-Kx2j9X6lFt0/TpFUXR7Os6I/AAAAAAAAARRc/myS5E_u5Kzs/s1600/P1090751.JPG
- LUCIO, M. M. and MCBRIDE, J. (2014) Questions of dignity and the study of labour relations: Conditions and identity at work in the cleaning sector. In: *BUIRA: 64th Annual Conference*. London.
- LUNDBERG, S. and ROSE, E. (2002) THE EFFECTS OF SONS AND DAUGHTERS ON MEN'S LABOR SUPPLY AND WAGES. *Review of Economics & Statistics*, 84 (2), 251-268.
- LUNDBERG, U. and LINDFORS, P. (2002) Psychophysiological reactions to telework in female and male white-collar workers. *Journal of Occupational Health Psychology*, 7 (4), 354-364.
- MACHIN, D. and FAYERS, P. M. (2010) *Randomized Clinical Trials: Design, Practice and Reporting*. Chichester: Wiley-Blackwell Publication.
- MADLOCK, P. E. (2012) The Influence of Supervisors' Leadership Style on Telecommuters. *Journal of Business Strategies*, 29 (1), 1-24.

- MADLOCK, P. E. (2013) The influence of motivational language in the technologically mediated realm of telecommuters. *Human Resource Management Journal*, 23 (2), 196-210.
- MADSEN, S. R. (2003) The Effects of Home-Based Teleworking on Work-Family Conflict. *Human Resource Development Quarterly*, 14 (1), 35-58.
- MAHLER, J. (2012) The Telework Divide: Managerial and Personnel Challenges of Telework. *Review of Public Personnel Administration*, 32 (4), 407-418.
- MAJOR, D. A., VERIVE, J. M. and JOICE, W. (2008) Telework as a dependent care solution: Examining current practice to improve telework management strategies. *The Psychologist-Manager Journal*, 11 (1), 65-91.
- MARKUS, M. L. (1994) Electronic Mail as the Medium of Managerial Choice. *Organization Science*, 5 (4), 502-527.
- MARSH, K. and MUSSON, G. (2008) Men at Work and at Home: Managing Emotion in Telework. *Gender, Work & Organization*, 15 (1), 31-48.
- MARTÍNEZ-SÁNCHEZ, A., PÉREZ-PÉREZ, M., DE-LUIS-CARNICER, P. and VELA-JIMÉNEZ, M. J. (2007) Telework, human resource flexibility and firm performance. *New Technology, Work & Employment*, 22 (3), 208-223.
- MARUYAMA, T., HOPKINSON, P. G. and JAMES, P. W. (2009) A multivariate analysis of work-life balance outcomes from a large-scale telework programme. *New Technology, Work & Employment*, 24 (1), 76-88.
- MARUYAMA, T. and TIETZE, S. (2012) From anxiety to assurance: concerns and outcomes of telework. *Personnel Review*, 41 (4), 450-469.
- MARX, K. (2008) *Το κεφάλαιο (The capital)*. Vol. 1 Athens: Σύγχρονη Εποχή Εκδοτική ΑΕΒΕ (Synchroni Epochi Ekdotiki AEEVE).
- MASLOW, A. H. (1943) A theory of human motivation. *Psychological Review*, 50, 370-396.
- MASLOW, A. H. (1970) *Motivation and personality*. 2nd ed. New York: Harper.
- MASSEY, R. (2014) *A year of your life is wasted commuting: Average worker pays more than £50,000 for the privilege*. London: Daily Mail. Available from: <http://www.dailymail.co.uk/news/article-2614573/A-year-life-wasted-commuting-Average-worker-pays-50-000-privilege.html> (Accessed 13/08/2014).
- MAXWELL, J. A. (2012) *A Realist Approach for Qualitative Research*. London: Sage.

- MAXWELL, J. A. and MITTAPALLI, K. (2010) Realism as a Stance for Mixed Methods Research. In: TASHAKKORI, A. and TEDDLIE, C. (Eds.) *SAGE Handbook of Mixed Methods in Social & Behavioral Research*. 2nd ed. Thousand Oaks: SAGE Publications, Inc, pp. 145-168.
- MCBRIDE, J. and STIRLING, J. (2014) Green shoots from the grass roots? The National Shop Stewards Network. *New Technology, Work and Employment*, 29 (1), 25-39.
- MCCONNELL, C. R. and BRUE, S. L. (1993) *Economics: Principles, Problems, and Policies*. 12th ed. New York: McGraw-Hill, Inc.
- MCNALL, L. A. M. A. D. N. J. M. (2010) Flexible Work Arrangements, Job Satisfaction, and Turnover Intentions: The Mediating Role of Work-to-Family Enrichment. *Journal of Psychology*, 144 (1), 61-81.
- MCNAUGHTON, D., RACKENSPERGER, T., DORN, D. and WILSON, N. (2014) "Home is at work and work is at home": Telework and individuals who use augmentative and alternative communication. *Work*, 48 (1), 117-126.
- MEDICINES AND HEALTHCARE PRODUCTS REGULATORY AGENCY (2012) *Good Clinical Practice Guide*. London: The Stationery Office.
- MELLO, J. (2007) Managing Telework Programs Effectively. *Employee Responsibilities & Rights Journal*, 19 (4), 247-261.
- MEYER, C. S., MUKERJEE, S. and SESTERO, A. (2001) Work-Family Benefits: Which Ones Maximize Profits? *Journal of Managerial Issues*, 13 (1), 28.
- MILLARD, S. K. (1998) THE VALUE OF SINGLE-CASE RESEARCH. *International Journal of Language & Communication Disorders*, 33, 370.
- MINTZBERG, H. (1973) *The Nature of Managerial Work*. New York: HarperCollinsPublishers.
- MINTZBERG, H. (2004) *Managers not MBAs: a hard look at the soft practice of managing and management development*. San Francisco: Berrett-Koehler Publishers.
- MINTZBERG, H. (2011) *Managing*. Harlow: Pearson Education Limited.
- MIRCHANDANI, K. (2000) "The Best of Both Worlds" and "Cutting My Own Throat": Contradictory Images of Home-Based Work. *Qualitative Sociology*, 23 (2), 159-182.

- MOJAVE MEDIA GROUP (2008) *A Brief History of Microsoft Outlook*. Available from: <http://www.brighthub.com/office/collaboration/articles/1491.aspx> (Accessed 07/03/2016).
- MONEY SUPERMARKET (2015) Available from: <http://www.moneysupermarket.com/broadband/> (Accessed 29/08/2015).
- MOON, N. W., LINDEN, M. A., BRICOUT, J. C. and BAKER, P. M. A. (2014) Telework rationale and implementation for people with disabilities: Considerations for employer policymaking. *Work*, 48 (1), 105-115.
- MORRIS, P. (2003) *Realism*. London: Routledge.
- MUSSON, G. and TIETZE, S. (2004) Feelin' groovy: appropriating time in home-based telework. *Culture & Organization*, 10 (3), 251-264.
- MUSTAFA, M. and GOLD, M. (2013) 'Chained to my work'? Strategies to manage temporal and physical boundaries among self-employed teleworkers. *Human Resource Management Journal*, 23 (4), 413-429.
- NAIR, N. (2015) *Rail Finance: Rail Fares Index (January 2015)*. London: Office of Rail and Road.
- NAKANISHI, H. (2015) Does Telework Really Save Energy? *International Management Review*, 11 (2), 89-97.
- NÄTTI, J., TAMMELIN, M., ANTTILA, T. and OJALA, S. (2011) Work at home and time use in Finland. *New Technology, Work & Employment*, 26 (1), 68-77.
- NEIROTTI, P., PAOLUCCI, E. and RAGUSEO, E. (2013) Mapping the antecedents of telework diffusion: firm-level evidence from Italy. *New Technology, Work & Employment*, 28 (1), 16-36.
- NHS JOBS (2015) *Working in the NHS: The NHS - a rewarding place to work*. London: NHS. Available from: https://www.jobs.nhs.uk/about_nhs.html (Accessed 26/10/2015).
- NHS NATIONAL INSTITUTE FOR HEALTH RESEARCH (2015) *Clinical Trials Toolkit*. Available from: <http://www.ct-toolkit.ac.uk/routemap> (Accessed 12/09/2015).
- NILLES, J. M. (1975) Telecommunications and Organizational Decentralization. *IEEE Transactions on Communications*, 23 (10), 1142-1147.
- NILLES, J. M. (1998) *Managing Telework: Strategies for Managing the Virtual Workforce*. New York: John Wiley & Sons, Inc.

- NITZSCHE, A., PFAFF, H., JUNG, J. and DRILLER, E. (2013) Work–Life Balance Culture, Work–Home Interaction, and Emotional Exhaustion: A Structural Equation Modeling Approach. *Journal of Occupational and Environmental Medicine*, 55 (1), 67-73
- NOON, M., BLYTON, P. and MORRELL, K. (2013) *The Realities of Work: Experiencing Work and Employment in Contemporary Society*. 4th ed. Basingstoke: Palgrave Macmillan.
- NORTHERN IRELAND DIRECT GOVERNMENT SERVICES (2014) London: Crown Available from: <http://www.nidirect.gov.uk/leaving-children-at-home-alone> (Accessed 30/4/2015).
- NUNES, F. (2005) Most relevant enablers and constraints influencing the spread of telework in Portugal. *New Technology, Work & Employment*, 20 (2), 133-149.
- O'DRISCOLL, M. P. and COOPER, C. L. (2002) Job-related Stress and Burnout. In: WARR, P. (Ed.) *Psychology at Work*. 5th ed. London: Penguin Books, pp. 203-228.
- O'MAHONEY, J. and VINCENT, S. (2014) Critical Realism as an Empirical Project: A Beginner's Guide. In: EDWARDS, P. K., O'MAHONEY, J. and VINCENT, S. (Eds.) *Studying Organizations Using Critical Realism*. Oxford: Oxford University Press, pp. 1-20.
- O'NEILL, T. A., HAMBLEY, L. A., GREIDANUS, N. S., MACDONNELL, R. and KLINE, T. J. B. (2009) Predicting teleworker success: an exploration of personality, motivational, situational, and job characteristics. *New Technology, Work and Employment*, 24 (2), 144-162.
- O'KANE, P. and HARGIE, O. (2007) Intentional and unintentional consequences of substituting face-to-face interaction with e-mail: An employee-based perspective. *Interacting with Computers*, 19 (1), 20-31.
- OECD (2012) *Community Survey on ICT Usage in Enterprises*. Available from: <http://www.oecd.org/sti/ieconomy/oecdkeyictindicators.htm>
- OECD (2015a) *Key ICT Indicators: Broadband subscriptions per 100 inhabitants in OECD countries*. Available from: <http://www.oecd.org/sti/ieconomy/oecdkeyictindicators.htm> (Accessed 31/08/2015).

- OECD (2015b) *OECD Broadband Portal*. Available from: <http://www.oecd.org/sti/broadband/oecdbroadbandportal.htm> (Accessed 31/08/2015).
- OETTINGER, G. S. (2011) The Incidence and Wage Consequences of Home-Based Work in the United States, 1980-2000. *Journal of Human Resources*, 46 (2), 237-260.
- OFCOM (2015) *Media: Facts and Figures*. London: Ofcom. Available from: <http://media.ofcom.org.uk/facts/>
- OFFICE FOR NATIONAL STATISTICS (2015a) Available from: <http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dev3/data/SingleClass.html?soc=2112> (Accessed 10/09/2015).
- OFFICE FOR NATIONAL STATISTICS (2015b) *Internet Access - Households and Individuals 2015*. London: Available from: <http://www.ons.gov.uk/ons/rel/rdit2/internet-access---households-and-individuals/2015/stb-ia-2015.html>
- OFFSTEIN, E. H., MORWICK, J. M. and KOSKINEN, L. (2010) Making telework work: leading people and leveraging technology for competitive advantage. *Strategic HR Review*, 9 (2), 32-37.
- OGG, G. D. (2006) *A Pragmatic Guide to Quality Management in Clinical Trial Research*. Boca Raton: CRC Press, Taylor & Francis Group.
- OLMSTED, B. and SMITH, S. (1994) *Creating a Flexible Workplace: How to select and manage alternative work options*. 2nd ed. New York: AMACOM.
- OTHONAIIOU, E. (2013) An Interview about CRAs main tasks. Interviewed by Andreas Chronopoulos [in person], 30/04/2013.
- OVERMYER, S. P. (2011) *Implementing Telework: Lessons Learned from Four Federal Agencies*. Washington: IBM Center for The Business of Government.
- PAGE, P. (2012) Introduction - Thinking about Clinical Research? In: PAGE, P., CARR, J., EARDLEY, W., CHADWICK, D. and PORTER, K. (Eds.) *An Introduction to Clinical Research*. Oxford: Oxford University Press, pp. xi-xiii.
- PAWSON, R. (1996) Theorizing the Interview. *The British Journal of Sociology*, 47 (2), 295-314.
- PEACEY, A. (2006) Teleworkers – extending security beyond the office. *Network Security*, 2006 (11), 14-16.

- PETERS, P., BLEIJENBERGH, I. and OLDENKAMP, E. (2009) The telework adoption process in a Dutch and French subsidiary of the same ICT-multinational. *The Journal of eWorking*, 3 (1), 1-16.
- PETERS, P., DEN DULK, L. and DE RUIJTER, J. (2010) May I work from home? Views of the employment relationship reflected in line managers' telework attitudes in six financial-sector organizations. *Equality, Diversity and Inclusion: An International Journal*, 29 (5), 517-531.
- PETERS, P. and VAN DER LIPPE, T. (2007) The time-pressure reducing potential of telehomeworking: the Dutch case. *International Journal of Human Resource Management*, 18 (3), 430-447.
- PIANTADOSI, S. (2005) *Clinical Trials: A Methodologic Perspective*. 2nd ed. Hoboken: John Wiley & Sons, Inc.
- PIKETTY, T. (2014) *Capital in the Twenty-First Century*. London: The Belknap Press of Harvard University Press.
- PIRDAVANI, A., BELLEMANS, T., BRIJS, T., KOCHAN, B. and WETS, G. (2014) Assessing the road safety impacts of a teleworking policy by means of geographically weighted regression method. *Journal of Transport Geography*, 39, 96-110.
- POLLIN, R. (2013) Austerity Economics Is Bad Economics. *New Labor Forum (Sage Publications Inc.)*, 22 (1), 86-89.
- POPPER, K. (2002) *The Logic of Scientific Discovery*. London: Routledge.
- PROKAZA, J. (2015) *The first ever smartphone turns 21*. London: British Telecom. Available from: <http://home.bt.com/tech-gadgets/phones-tablets/the-first-ever-smartphone-turns-21-11363997537456> (Accessed 31/08/2015).
- PROSSER, T. (2015) Accounting for National and Sectoral Variance in the Implementation of European Social Partner 'Soft' Law: The Cases of the Implementation of the Telework and Work-Related Stress Agreements. *British Journal of Industrial Relations*, 53 (2), 254-277.
- PYÖRIÄ, P. (2011) Managing telework: risks, fears and rules. *Management Research Review*, 34 (4), 386-399.
- RAGHURAM, S. and FANG, D. (2014) Telecommuting and the role of supervisory power in China. *Asia Pacific Journal of Management*, 31 (2), 523-547.

- RANG, H. P., DALE, M. M. and RITTER, J. M. (1999) *Pharmacology*. 4th ed. London: Churchill Livingstone.
- RANI, U. and UNNI, J. (2009) Do Economic Reforms Influence Home-Based Work? Evidence from India. *Feminist Economics*, 15 (3), 191-225.
- REDMAN, T., SNAPE, E. and ASHURST, C. (2009) Location, Location, Location: Does Place of Work Really Matter? *British Journal of Management*, 20, S171-S181.
- REED, A., HUNTON, J. E. and NORMAN, C. S. (2006) A Postmodern Stakeholder Analysis of Telework. *Advances in Accounting Behavioral Research*, 9, 209-235.
- REILLY, P. (2001) *Flexibility at Work: Balancing the interests of employer and employee*. Aldershot: Gower.
- ROBERTSON, M. M., SCHLEIFER, L. M. and HUANG, Y.-H. (2012) Examining the macroergonomics and safety factors among teleworkers: Development of a conceptual model. *Work*, 41, 2611-2615.
- ROBSON, C. (2011) *Real world research: a resource for users of social research methods in applied settings*. 3rd ed. Chichester: John Wiley and Sons Ltd.
- ROCCO, D. A. (2014) Telecommuting as a Reasonable Accommodation: A Remote Possibility? *Employee Relations Law Journal*, 40 (3), 48-52.
- RODRÍGUEZ-MUÑOZ, A., SANZ-VERGEL, A., DEMEROUTI, E. and BAKKER, A. (2013) Engaged at Work and Happy at Home: A Spillover–Crossover Model. *Journal of Happiness Studies*, 1-13.
- ROGERS, S. (2012) *Child care costs: how the UK compares with the world*. London: Guardian. Available from: <http://www.theguardian.com/news/datablog/2012/may/21/child-care-costs-compared-britain> (Accessed 25/10/2015).
- ROYAL COLLEGE OF NURSING (2015a) *Pay rates 2008-09*. London: Royal College of Nursing. Available from: http://www.rcn.org.uk/support/pay_and_conditions/nursing_pay_rates_200809 (Accessed 17/10/2015).
- ROYAL COLLEGE OF NURSING (2015b) *Pay rates 2015-16*. London: Royal College of Nursing. Available from:

http://www.rcn.org.uk/support/pay_and_conditions/pay-rates-2015-16

(Accessed 17/10/2015).

RUIZ, Y. and WALLING, A. (2005) Home-based working using communication technologies. *Labour Market Trends*, 113 (10), 417-426.

RUTTER, J. (2015) *Childcare Costs Survey 2015*. London: Family and Childcare Trust.

SANDS, J. and HARPER, T. (2007) Family-Friendly Benefits and Organizational Performance. *Business Renaissance Quarterly*, 2 (1), 107-126.

SARDESHMUKH, S. R., SHARMA, D. and GOLDEN, T. D. (2012) Impact of telework on exhaustion and job engagement: a job demands and job resources model. *New Technology, Work & Employment*, 27 (3), 193-207.

SARİOĞLU, E. (2013) Gendering the Organization of Home-based Work in Turkey: Classical versus Familial Patriarchy. *Gender, Work & Organization*, 20 (5), 479-497.

SCHEIN, E. H. (1996) Career Anchors Revisited: Implications for Career Development in the 21st Century. *The Academy of Management Executive (1993-2005)*, 10 (4), 80-88.

SCHMIDT, D. E. and DUENAS, G. (2002) Incentives to encourage worker-friendly Organizations. *Public Personnel Management*, 31 (3), 293-293.

SCHNEIER, B. (2000) *Secrets and Lies: Digital Security in a Networked World*. Indianapolis: Wiley Publishing, Inc.

SHALE, J., BALCHIN, K., RAHMAN, J., REEVE, R. and ROLIN, M. (2015) *Households Below Average Income: An analysis of the income distribution 1994/95 - 2013/14*. London: Department for Work & Pensions.

SILVA, R. E. D., AMATO, A. A., GUILHEM, D. B. and NOVAES, M. R. C. G. (2016) Globalization of clinical trials: ethical and regulatory implications. *2016*, 3 (1), 8.

SILVERMAN, D. (2013) *Doing Qualitative Research*. 4th ed. London: Sage.

SKYPE (2015) *How much bandwidth does Skype need?* . Luxemburg: Skype Communications SARL. Available from: <https://support.skype.com/en/faq/FA1417/how-much-bandwidth-does-skype-need> (Accessed 20/10/2015).

SKYPE (2016) *About Skype*. Available from: <http://www.skype.com/en/about/> (Accessed 07/03/2016).

SKYRME, D. J. (1994) Flexible working: Building a lean and responsive organization. *Long Range Planning*, 27 (5), 98-110.

SMALL, M. L. (2009) 'How many cases do I need?': On science and the logic of case selection in field-based research. *Ethnography*, 10 (1), 5-38.

SMITH, C. and ELGER, T. (2014) Critical Realism and Interviewing Subjects. In: EDWARDS, P. K., O'MAHONEY, J. and VINCENT, S. (Eds.) *Studying Organizations Using Critical Realism: A Practical Guide*. Oxford: Oxford University Press, pp. 109-131.

SMITH, M. J. (1998) *Social Science in question*. London: SAGE Publications Ltd in association with The Open University.

SOK, J., BLOMME, R. and TROMP, D. (2014) Positive and Negative Spillover from Work to Home: The Role of Organizational Culture and Supportive Arrangements. *British Journal of Management*, 25 (3), 456-472.

SOUL-LAWTON, J. and KROON, R. (2000) Good clinical practice. In: COHEN, A. and POSNER, J. (Eds.) *A Guide to Clinical Drug Research*. 2nd ed. Dordrecht: Kluwer Academic Publishers, pp. 145-186.

STANWORTH, C. (1996) *Working at Home: A Study of Homeworking and Teleworking*. London: Institute of Employment Rights.

STAVROU, E. T. (2005) Flexible work bundles and organizational competitiveness: a cross-national study of the European work context. *Journal of Organizational Behavior*, 26 (8), 923-947.

STEVENS, M. (2012) A different Olympic legacy. *People Management*, 19-19.

STIGLITZ, J. E. (2015) *The Great Divide*. London: Allen Lane.

STRACHAN, G. and BURGESS, J. (1998) The "family friendly" workplace: Origins, meaning and application at Australian workplaces. *International Journal of Manpower*, 19 (4), 250-265.

STRAUSS, A. and CORBIN, J. (1998) *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. 2nd ed. Thousand Oaks: SAGE Publications, Inc.

SULLIVAN, C. (2000) Space and the intersection of work and family in homeworking households. *Community, Work & Family*, 3 (2), 185-204.

SULLIVAN, C. (2003) What's in a name? Definitions and conceptualisations of teleworking and homeworking. *New Technology, Work & Employment*, 18 (3), 158-165.

- SULLIVAN, C. and LEWIS, S. (2001) Home-based Telework, Gender, and the Synchronization of Work and Family: Perspectives of Teleworkers and their Co-residents. *Gender, Work & Organization*, 8 (2), 123.
- SULLIVAN, C. and SMITHSON, J. (2007) Perspectives of homeworkers and their partners on working flexibility and gender equity. *International Journal of Human Resource Management*, 18 (3), 448-461.
- SULLIVAN, J. J. (1988) Three Roles of Language in Motivation Theory. *Academy of Management Review*, 13 (1), 104-115.
- SWISHER, K. (2013) *Survey Says: Despite Yahoo Ban, Most Tech Companies Support Work-From-Home for Employees*. All Things Digital. Available from: <http://allthingsd.com/20130225/survey-says-despite-yahoo-ban-most-tech-companies-support-work-from-home-for-employees/> (Accessed 25/08/2015).
- TASKIN, L. (2010) Introducing telework in a public and bureaucratic environment: a re-regulationist perspective on a non-conventional change. *International Journal of Management Concepts and Philosophy*, 4 (3-4), 294-310.
- TASKIN, L. and BRIDOUX, F. (2010) Telework: a challenge to knowledge transfer in organizations. *International Journal of Human Resource Management*, 21 (13), 2503-2520.
- TASKIN, L. and EDWARDS, P. (2007) The possibilities and limits of telework in a bureaucratic environment: lessons from the public sector. *New Technology, Work & Employment*, 22 (3), 195-207.
- TEAMVIEWER (2016) *TeamViewer: This is who we are*. Available from: <https://www.teamviewer.com/en/company/company.aspx> (Accessed 11/09/2016).
- THE PARLIAMENTARY OFFICE OF SCIENCE AND TECHNOLOGY (2014) *Transparency of Clinical Trial Data*. London: www.parliament.uk. Available from: <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-461#fullreport> (Accessed 20/02/2016).
- THE UNIVERSITY OF TEXAS AT AUSTIN (2007) *Selected readings in Hellenistic Philosophy: Epicureanism (quotes from Epicurus)*. Available from: http://www.utexas.edu/courses/introgreece/hellenistic_philosophy.html (Accessed 11/04/2015).

- THE WINDOWS CLUB (2016) *History & Evolution of Microsoft Office Software*. Available from: <http://www.thewindowsclub.com/history-evolution-microsoft-office-software> (Accessed 07/03/2016).
- THOMPSON, L. F. and ASPINWALL, K. R. (2009) The recruitment value of work/life benefits. *Personnel Review*, 38 (2), 195-210.
- THOMPSON, P. and MCHUGH, D. (2009) *Work Organisations: A Critical Approach*. 4th ed. Basingstoke: Palgrave Macmillan.
- TIETZE, S. (2002) When "Work" Comes "Home": Coping Strategies of Teleworkers and their Families. *Journal of Business Ethics*, 41 (4), 385-396.
- TIETZE, S. (2005) Discourse as strategic coping resource: managing the interface between "home" and "work". *Journal of Organizational Change Management*, 18 (1), 48-62.
- TIETZE, S., COHEN, L. and MUSSON, G. (2003) *Understanding Organizations through Language*. London: Sage Publications.
- TIETZE, S. and MUSSON, G. (2003) The times and temporalities of home-based telework. *Personnel Review*, 32 (4), 438-438.
- TIETZE, S. and MUSSON, G. (2005) Recasting the Home-Work Relationship: A Case of Mutual Adjustment? *Organization Studies*, 26 (9), 1331-1352.
- TIETZE, S. and MUSSON, G. (2010) Identity, identity work and the experience of working from home. *Journal of Management Development*, 29 (2), 148-156.
- TIETZE, S., MUSSON, G. and SCURRY, T. (2009) Homebased work: a review of research into themes, directions and implications. *Personnel Review*, 38 (6), 585-604.
- TIETZE, S. and NADIN, S. (2011) The psychological contract and the transition from office-based to home-based work. *Human Resource Management Journal*, 21 (3), 318-334.
- TIPPLE, G. (2006) Employment and work conditions in home-based enterprises in four developing countries: do they constitute 'decent work'? *Work, employment and society*, 20 (1), 167-180.
- TORRINGTON, D., HALL, L., TAYLOR, S. and ATKINSON, C. (2011) *Human Resource Management*. Harlow: Pearson Education Limited.
- TRADES UNION CONGRESS (2015a) *Four million people are now homeworkers but more want to join them*. London: Trades Union Congress.

Available from: <https://www.tuc.org.uk/workplace-issues/work-life-balance/four-million-people-are-now-homeworkers> (Accessed 04/09/2015).

TRADES UNION CONGRESS (2015b) *Bullying*. London: Trades Union Congress. Available from: <https://www.tuc.org.uk/workplace-issues/health-and-safety/bullying> (Accessed 02/11/2015).

TRANSPORT FOR LONDON (2015) *Adult rate Tube, DLR and most London Overground fares*. London: Available from: <https://tfl.gov.uk/cdn/static/cms/documents/tube-dlr-lo-adult-fares.pdf> (Accessed 23/7/2015).

TROUP, C. and ROSE, J. (2012) Working from home: do formal or informal telework arrangements provide better work–family outcomes? *Community, Work & Family*, 15 (4), 471-486.

TRUSS, C., MANKIN, D. and KELLIHER, C. (2012) *Strategic Human Resource Management* Oxford: Oxford University Press.

TUFTS CENTER FOR THE STUDY OF DRUG DEVELOPMENT IMPACT REPORT (2012) *Study monitor workload high and varied with wide disparity by global region: Assessment sets global benchmark for CRA workload and utilization*. Boston: Tufts Center for the Study of Drug Development, Tufts University.

UK CLINICAL TRIALS GATEWAY (2016) *Home: Welcome to the UK Clinical Trials Gateway*. London: National Institute for Health Research. Available from: <http://www.ukctg.nihr.ac.uk/> (Accessed 20/02/2016).

UK GOVERNMENT (2014a) *Disability facts and figures*. London: Department for Work and Pensions & Office for Disability Issues. Available from: <https://www.gov.uk/government/publications/disability-facts-and-figures/disability-facts-and-figures> (Accessed 10/09/2015).

UK GOVERNMENT (2014b) *National Minimum Wage rates*. London: Crown. Available from: <https://www.gov.uk/national-minimum-wage-rates> (Accessed 30/7/2015).

US GOVERNMENT PRINTING OFFICE. (1949) *Trials of War Criminals before the Nuremberg Military Tribunals under Control Council Law No 10*. US Government Printing Office, 2.

US NATIONAL INSTITUTES OF HEALTH (2015) *Trends, Charts and Maps*. Bethesda: US National Institutes of Health. Available from: <https://www.clinicaltrials.gov/ct2/resources/trends> (Accessed 12/09/2015).

VALSECCHI, R. (2006) Visible moves and invisible bodies: the case of teleworking in an Italian call centre. *New Technology, Work & Employment*, 21 (2), 123-138.

VAN LIER, T., DE WITTE, A. and MACHARIS, C. (2012) The Impact of Telework on Transport Externalities: The Case of Brussels Capital Region. *Procedia - Social and Behavioral Sciences*, 54 (0), 240-250.

VAROUFAKIS, Y. (2013) *The Global Minotaur: America, Europe and the Future of the Global Economy*. 2nd ed. London: Zed Books.

VAROUFAKIS, Y., HALEVI, J. and THEOCARAKIS, N. J. (2011) *Modern Political Economics: Making sense of the post-2008 world*. Abingdon: Routledge.

VAYRE, E. and PIGNAULT, A. (2014) A systemic approach to interpersonal relationships and activities among French teleworkers. *New Technology, Work & Employment*, 29 (2), 177-192.

VEGA, G. (2003) *Managing Teleworkers and Telecommuting Strategies*. Westport: Praeger.

VEGA, R., ANDERSON, A. and KAPLAN, S. (2015) A Within-Person Examination of the Effects of Telework. *Journal of Business and Psychology*, 30 (2), 313-323.

VERMAAS, K. and BONGERS, F. (2007) Broadband in Telework, Health and Safety: The User Perspective. *Journal of Internet Commerce*, 6 (2), 73-96.

VESALA, H. and TUOMIVAARA, S. (2015) Slowing work down by teleworking periodically in rural settings? *Personnel Review*, 44 (4), 511-528.

VITTERSØ, J., AKSELSEN, S., EVJEMO, B., JULSRUD, T. E., YTTRI, B. and BERGVIK, S. (2003) Impacts of Home-Based Telework on Quality of Life for Employees and Their Partners. Quantitative and Qualitative Results From a European Survey. *Journal of Happiness Studies*, 4 (2), 201-233.

VODAFONE (2013) *A brief history of mobile data: The road to the next generation....* London: Vodafone. Available from: <http://blog.vodafone.co.uk/2013/01/21/a-brief-history-of-mobile-data> (Accessed 31/08/2015).

- WAPSHOTT, R. and MALLETT, O. (2012) The spatial implications of homeworking: a Lefebvrian approach to the rewards and challenges of home-based work. *Organization*, 19 (1), 63-79.
- WEINDLING, P. J. (2008) The Nazi Medical Experiments. In: EMANUEL, E. J., GRADY, C., CROUCH, R. A., LIE, R. K., MILLER, F. G. and WENDLER, D. (Eds.) *The Oxford Textbook of Clinical Research Ethics*. Oxford: Oxford University Press, pp. 18-30.
- WESTABY, J. D., VERSENYI, A. and HAUSMANN, R. C. (2005) Intentions to Work During Terminal Illness: An Exploratory Study of Antecedent Conditions. *Journal of Applied Psychology*, 90 (6), 1297-1305.
- WHEATLEY, D. (2012) Good to be home? Time-use and satisfaction levels among home-based teleworkers. *New Technology, Work & Employment*, 27 (3), 224-241.
- WHEATLEY, D. (2013) Location, Vocation, Location? Spatial Entrapment among Women in Dual Career Households. *Gender, Work & Organization*, 20 (6), 720-736.
- WHITE, M., HILL, S., MILLS, C. and SMEATON, D. (2004) *Managing to Change? British Workplaces and the Future of Work*. (The Future of Work) Basingstoke: Palgrave Macmillan.
- WHITTLE, A. and MUELLER, F. (2009) 'I could be dead for two weeks and my boss would never know': telework and the politics of representation. *New Technology, Work & Employment*, 24 (2), 131-143.
- WIGHT, V. R. and RALEY, S. B. (2009) When Home Becomes Work: Work and Family Time among Workers at Home. *Social Indicators Research*, 93 (1), 197-202.
- WILKINSON, A. and REDMAN, T. (2013) *Contemporary Human Resource Management: Text and Cases*. 4th ed. Harlow: Pearson Education Limited.
- WILKS, L. and BILLSBERRY, J. (2007) Should we do away with teleworking? An examination of whether teleworking can be defined in the new world of work. *New Technology, Work & Employment*, 22 (2), 168-177.
- WILLIAMS, S. (2014) *Introducing Employment Relations: A critical approach*. 3rd ed. Oxford: Oxford University Press.

- WOLFRAM, H.-J. and GRATTON, L. (2014) Spillover Between Work and Home, Role Importance and Life Satisfaction. *British Journal of Management*, 25 (1), 77-90.
- WORLD MEDICAL ASSOCIATION (2013) *World Medical Association Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects*. The Journal of the American Medical Association. Available from: <http://jama.jamanetwork.com/article.aspx?articleid=1760318> (Accessed 10/09/2015).
- YERAGUNTLA, A. and BHAT, C. R. (2005) Classification Taxonomy and Empirical Analysis of Work Arrangements. *Transportation Research Board*, (1926), 233-241.
- YIN, R. K. (2014) *Case Study Research: Design and Methods*. 5th ed. Thousand Oaks: Sage.
- YOUNGAH, P., FRITZ, C. and JEX, S. M. (2011) Relationships Between Work-Home Segmentation and Psychological Detachment From Work: The Role of Communication Technology Use at Home. *Journal of Occupational Health Psychology*, 16 (4), 457-467.
- ZAKON, R. H. (2015) *Hobbes' Internet Timeline 12*. Available from: <http://www.zakon.org/robert/internet/timeline/> (Accessed 31/08/2015).
- ZEYTINOGLU, I. U., COOKE, G. B. and MANN, S. L. (2009) Flexibility: Whose Choice Is It Anyway? *Relations Industrielles / Industrial Relations*, 64 (4), 555-574.
- ZHU, P. (2013) Telecommuting, Household Commute and Location Choice. *Urban Studies (Sage Publications, Ltd.)*, 50 (12), 2441-2459.
- ZIEGLER, A. (2015) *Photograph 51*. London, Oberon Books.

Appendices

Appendix 1: Main Sources of Literature Review Chapter

Study	Type of working as mentioned by authors	Output related to present research	Sample	Research Methodology
Skyrme (1994)	Flexible Working (includes teleworking but teleworking is considered as a part-time activity).	Flexible working reduces employer's costs.	One UK organisation (it hires around 60 teleworkers who work at home).	Single-case study.
Kurland and Bailey (1999)	Telework (home-based telecommuting, satellite offices, neighbourhood work centres and mobile working; the definition of home-based telecommuters does not include self-employed who work from home but does include employees who work at home on a regular basis, although it is rare to have employees who work from home every day).	Home-based telecommuting has the following advantages: greater productivity, lower absenteeism, better morale, greater openness, fewer interruptions at office, reduced overheads, wider talent pool, lower turnover, regulation compliance.		Literature Review.
Duxbury and	Telework (Definition includes	The following forces have driven		Literature Review

Higgins (2002)	home-based work).	<p>(among others) the growth of telework: The reduced cost and improved performance of ICTs, the need for companies to reduce costs and the availability of tools and services (for example, the internet) that support remote work (Duxbury and Higgins, 2002: 163-164).</p> <p>The benefits for employees are: Reduced commuting time, improved management of work and family responsibilities, reduced costs, improved opportunities, increased ability to participate in the local community, better family life, flexible hours, improved work environment (no interruptions, autonomy and improved efficiency), better control and better quality of life (Duxbury and Higgins, 2002: 169).</p> <p>The disadvantages to employees are: Social isolation, overwork, work-family conflict, conflict with office-based colleagues, costs of setting up a home-based office (Duxbury and Higgins,</p>		(Book Chapter).
----------------	-------------------	---	--	-----------------

		<p>2002: 178).</p> <p>The benefits for the employer are: Increased productivity, reduced costs, reduced absenteeism and turnover, improved motivation and retention, expanded labour pools, increased time available to work (by reducing non-productive time in office, enhancing peak performance and working with fewer interruptions), organisational flexibility, flexible staffing, expanded service hours and improved response time to customer requests, schedule flexibility, tax incentives and compliance with legislation (Duxbury and Higgins, 2002: 173).</p> <p>The disadvantages to organisations are: Lack of visual monitoring, a need to have cultural change, some individuals (outsiders) may consider that teleworkers do not work, data-security issues, trade union complaints that they lose members' proximity, technology needed may be expensive and it may</p>		
--	--	--	--	--

		be difficult to arrange meetings or emergency actions that involve telecommuters (Duxbury and Higgins, 2002: 179-180).		
Kitou and Horvath (2003)	Telework (work at home or at another place outside the office).	Telework may decrease CO ₂ , NO _x , SO ₂ , PM ₁₀ and CO, but not N ₂ O and CH ₄ emissions. Benefits of telework may be undermined because the home-related increase in emissions. Conclusions cannot apply to other countries and cultures as they have different commuting, heating and cooling attitudes.	US teleworkers (home-based).	Web-based scalable decision-support tool and a simulation software to evaluate air-emissions.
Collins (2005)	Teleworking (home-based employees who work 60-90 per cent of their time at home).	Teleworking Increases employees' productivity and satisfaction with their work-life balance But: Teleworking increases perceptions about limited career development and opportunities for training; Teleworking creates a feeling of 'us and them' between office-based and home-based employees; Implementation of teleworking created IT problems which were more	Employees of Lloyd's Bank in London.	Case study (qualitative and quantitative methods).

		significant than initially expected.		
Stavrou (2005)	Flexible work arrangements (includes work from home and tele-working where tele-working is defined as working all or some of the week away from the office by maintaining an electronic presence in the office).	Work away from office improves performance and reduces absenteeism.	2811 employees from 14 EU countries from various sectors.	Structured questionnaire.
Golden (2006)	Telework (mainly working from home)	Telework improves commitment and decreases turnover	393 college-educated employees of professional level in a large American IT corporation.	Web survey.
Peacey (2006)	Telework.	Telework increases IT-related risks. For example: Teleworkers may permit other members of family to have internet access from their devices, external threats target users' devices and not the external firewalls (central systems) anymore, users' 'loose' attitude may attract worms and viruses, gaining access through a virus to a terminal device may transfer		Expert's opinion; no primary data.

		the threat to the main system through the VPN link.		
Limburg and Jackson (2007)	Remote working (includes homeworking where workers use ICTs).	Technology can be used to control remote employees. Workflow-management systems can be used for all types of management (centralised and formal control or democratic management) and this happens independently of co-location. A pilot study suggests that homeworking improves performance.	Clerical home workers, sales people and software developers.	Three case studies (one primary research based on interviews and observation and two secondary data analysis).
Baker et al. (2007)	Working from home (only 18 per cent of the sample work from home for five days or more each week).	Organisational and job-related factors influence homeworkers' satisfaction and perceived productivity more than work styles and household characteristics. Training of home-based employees is not related to outcome. Technical support, HR support, manager's trust in, and training of, others are significantly correlated with satisfaction of home-based employees. Working from home is associated with employees' longer period of service (four or more years).	50 employees of 20 Australian organisations.	Questionnaires.
Brodts and Verburg	Mobile work (the definition includes tasks carried out	<i>'Adequate skills, sufficient commitment and a systematic preparation are key</i>	15 interviews from five	Meta-analysis of case studies

(2007)	independently from a stable location and supported by ICT).	<i>enablers to the success of mobile work environments'</i> (Brodt & Verburg, 2007: 63). Mobile work environments improve overall organisational competitiveness.	European case studies.	(large and small, private and public organisations) and additional interviews for triangulating the results.
Martinez-Sanchez et al (2007)	Telework (the definition includes home-based teleworkers, mobile teleworkers and employees working in telecentres at least one day a week).	HR development practices enhance telework and improve performance at organisational level. Telework is positively associated with performance.	156 Spanish firms (CEO & HR Manager).	Postal survey.
Vermaas and Bongers (2007)	Telework (work from home by using internet)	People telework to combine work and private life. The absence of financial compensation by employers is not an obstacle to employees teleworking. The main advantages of telework are the decreasing commuting time, involvement with other tasks such as childcare, the increase in productivity and the fact that they operate more independently. But: Telework may create isolation,	Internet users in Netherlands.	Online questionnaire, focus groups and diaries.

		decrease of social contacts with colleagues and less sharing of knowledge.		
Golden (2007)	Telework	Telework is associated with non-teleworkers' dissatisfaction and turnover intentions	240 educated professional employees from a high technology company, who were co-workers of teleworkers (but did not telework themselves).	Questionnaires (mainly used also by earlier studies).
Gajendran and Harrison (2007)	Telecommuting (In almost all studies workplace was home. The intensity of telecommuting varied from 0 to 5 days per week where 19 studies had an intensity of 2.5 or more days of telecommuting per week and 18 studies had fewer than 2.5 days per week).	Telecommuting is associated with higher perceived autonomy, lower work-family conflict, positive effect on the employee-manager relationship, increased job satisfaction and performance (as perceived by managers but not as self-rated by telecommuters), decreased role stress and intended staff turnover; it is not associated with diminished career prospects. But:	46 studies (27 published works and 19 unpublished dissertations).	Meta-analysis.

		Telecommuting may be a problem for relationships between telecommuters and their co-workers.		
O’Kane and Hargie (2007)	The research is not about telework but about the use of emails.	<i>‘...as computer-mediated communication (CMC) intensifies, communication is increasingly characterised by a complex interplay between CMC and F2F [Face to Face], with e-mail affecting communication in positive and negative ways and also with intended and unintended outcomes. For organisations, the key is to raise employee awareness about their email communications in order to maximise effectiveness and prevent negative outcomes such as back-covering and relationship breakdown.’ (O’Kane and Hargie, 2007: 20)</i>	29 users of emails.	In-depth interviews.
Marsh and Musson (2008)	Home-based telework	<i>‘Telework can help fathers to develop emotional discourses and practices traditionally associated with working mothers’ (Marsh & Musson, 2008:31). It allows them to become ‘better’ fathers.</i>	7 male employees in the UK.	Semi-structured interviews.
Leung (2008)	Telework (the definition includes home-based	<i>‘IBM Canada... relies on tools such as instant messaging and collaboration</i>		Expert’s opinion; no primary data.

	employees).	<i>software to keep tabs on its 8,000 employees who work off-site and keep them in touch with colleagues'</i> (Leung, 2008: 34).		
Major et al (2008)	Telework (home-based).	Telework positively influences their job performance and intention to remain in organisation; it assists with dependent care responsibilities.	863 teleworking federal government employees with dependants in the USA.	Survey.
Hislop et al. (2008)	Remote working (The definition includes home-based working)	<i>'...because remote working implies less scope for direct supervision, selection becomes more important.'</i> (Hislop et al., 2008: 578)		Literature Review in a book chapter.
Redman et al (2009)	Homeworking.	Homeworking improves employees' well-being and their work-home balance. It reduces burnout and stress. There is no evidence that homeworking reduces organisational citizenship. But: Homeworking may undermine employees' perception about personal development and career progress.	749 managerial and professional employees in the UK.	Web-based questionnaire.
Maruyama et al (2009)	Telework (includes working from home as well as flexible	The ability to control working hours influences WLB.	1566 teleworkers in	Online survey.

	workstations which can support multiple users).	Dependents or gender are not significant for WLB. Telework is positively associated with WLB, good relationship with other members of the household, the decrease of commuting time and the ability to choose where and when to work. Very few teleworkers claimed that telework harms family relationships or that it creates problems for domestic jobs.	BT (mainly managers, sales and administrative workers).	
Thompson and Aspinwall (2009)	Telecommuting (or teleworking where it is perceived by authors as a mode of work where employees may work remotely).	People with strong internet self-efficacy are particularly attracted to job opportunities which include telecommuting. Childcare benefits (including telecommuting among others) influence women's job choices more than men's job choices.	125 students (only 7 had children) from a large US university, who were asked to evaluate job descriptions.	Survey (questionnaires).
Jaakson and Kallaste (2010)	Telework (most of the times from home).	According to managers: telework improves employee satisfaction, productivity, motivation, efficiency, performance, company's reputation, continuation of operations and recruitment and retention and saves	Estonian organisations.	8 in-depth case studies.

		costs.		
Offstein et al (2010)	Telework.	Good tele-leader should be result-oriented (and not process-oriented) and should trust employees. Telework offers organisations a competitive advantage.	Wide range of American organisations (profit and non-profit/public).	Interviews, personal experiences, observations.
Alexander et al (2010)	Flexible work schedules.	High-level professionals are more likely to have flexible work schedule.	662 employees in Netherlands.	Survey.
Taskin (2010)	Telework.	Telework can work in bureaucratic public organisations.	2 public organisations in Belgium.	Interviews.
Hunton and Norman (2010)	Telework (home or satellite office).	Task performance is positively associated with organisational commitment. Commitment is significantly higher when employees have the option to work from both downtown/satellite office and home.	Personnel of a multi-site health care company in the USA.	Survey.
Peters et al (2010)	Home-based telework	Old-fashioned managerial perspectives are barriers to the organisational effectiveness and employee commitment that telework can offer. Trust and commitment need to replace control and coordination.	65 managers in 6 financial sector organisations in Netherlands, UK and Sweden.	Multi-methods (interviews, vignette, questionnaires).
Overmyer (2011)	Telework (It is defined as any work which is conducted	Key success factors: The need to have a written telework	4 federal agencies in the	Case studies.

	away from central premises and requires the support of ICTs).	<p>policy;</p> <p>Support from top management is essential;</p> <p>Training for both employees and managers is essential;</p> <p>Measurement of performance is critical;</p> <p>Personnel evaluations need to be based on performance and not on presence;</p> <p>Teleworkers need to be included in all meetings and collaborative office activities;</p> <p>IT measurements are needed to protect organisational data. For example, VPNs and CITRIX/RSA gateways and tokens need to be utilised when teleworkers connect to workplace networks from home.</p>	USA.	
Atkinson and Hall (2011)	Flexible working (no evidence that definition includes homeworkers).	Increases happiness, discretionary behaviour and performance.	43 employees of NHS acute trust.	Qualitative interviews.
Oettinger (2011)	Home-based work.	The growth of home-based work phenomenon is the result of the the fall of costs for the employer (mainly the drop in IT costs).	US home-based workers.	Analysis of the US Census of population for 1980, 1990, 2000.

Pyöriä (2011)	Telework.	Telework improves organisational image. It is perceived that it creates an image of a positive and modern workplace. But: Telework increases IT risks (mainly data security).		Literature Review (it includes many examples from Finland).
Harker-Martin and MacDonnell (2012)	Telework (the definition includes work from home).	Telework improves productivity, commitment, retention, performance.	22 empirical studies.	Meta-analysis.
Wheatley (2012)	Home-based teleworking.	Homeworkers have greater levels of satisfaction than other workers. Home-based teleworking benefits home-based workers (especially working mothers). Extensive hours of household work are reported by women.	British households.	Analysis of the British Household Panel Survey.
Allen et al (2013)	Flexible work (the definition includes flexibility of space)	Those with children benefit more from flexible work arrangements than those without.	61 independent samples from 58 articles.	Meta-analysis.
Maruyama and Tietze (2012)	Telework (the definition includes working from home).	Teleworkers tend to underestimate positive and overestimate negative experience of telework prior to the implementation of telework; pre-telework expectations are significantly	394 teleworkers from BT, who had teleworked for less than 12 months (the	Questionnaires.

		<p>different from post-telework outcome. Many female teleworkers declared that telework helped them with childcare responsibilities.</p> <p>Female teleworkers with children more likely than males to declare that they did not have concerns about conflicts at home as a result of their presence.</p> <p>Sales and marketing teleworkers more likely to complain about lack of visibility and career progression (female teleworkers with children, more than male, consider this a problem).</p>	<p>research was conducted in 2002).</p>	
Glenn Dutcher (2012)	Telecommuting.	<p>Females are more productive outside the lab but males are less productive outside the lab.</p> <p>Students who need more personal control are more productive outside the lab but those who need less are more productive inside the lab.</p> <p>Students are less productive outside the lab in dull tasks and more productive when involved in creative tasks.</p>	125 students from Florida State University.	An experiment where students imitate office and home environment (63 students work inside the lab and 62 students outside the lab).
Mahler (2012)	Telework (the definition includes working from home).	Telework increases the levels of dissatisfaction of non-teleworkers who	Large sample of government	Questionnaire-based surveys.

		<p>stay back at office.</p> <p>Telework is considered as a benefit and denying such a benefit may create dissatisfaction.</p>	<p>employees in the USA.</p>	
Hilbrecht et al. (2013)	<p>Telework (part-time or full-time work at home).</p>	<p>Teleworkers highlight the importance of having set hours of work to ensure that they complete their work.</p> <p>Teleworkers resist being drawn into household tasks during their working time but both fathers and mothers find time to spend with children.</p> <p>Telework gives opportunities for leisure (but usually for men or women without children).</p> <p>Telework saves commuting time.</p> <p>Telework is used by companies which seek to reduce costs.</p>	<p>51 teleworkers employed in a financial organisation in Canada.</p>	<p>Semi-structured interviews.</p>

Appendix 2: Critical Research Literature on WFH

Study	Type of working as mentioned by authors	Critical output related to present research	Sample	Research Methodology
Sullivan (2000)	Homeworking.	Homeworkers need separate space (room) to work / women are less likely to have separate space / co-residents feel that they lose space and this can cause conflict / women are more likely to report conflict and problems relating to space.	14 homeworkers and 14 co-residents in the UK.	Semi-structured interviews.
Felstead et al. (2001)	Work at home (employees who work mainly, partially or sometimes at home).	Manual workers receive less pay than site-based workers / the opposite case for non-manual workers / women who work mainly from home are more likely to report having dependent children.	Non-manual and manual workers in the UK.	Secondary data analysis of Labour Force Survey (LFS).
Felstead et al. (2002)	Work at home (it may be only one day per week).	Those who have the opportunity to choose where to work (even one day from home) are male, highly educated, better paid and in higher grade occupations.	Manual and non-manual home workers in the UK.	Secondary data analysis of Workplace Employee Relations Survey (WERS98) and Labour Force Survey (LFS).
Tietze (2002)	Telework (work from home 1-3 days per week)	Coping strategy (there is a need for employees to manage problems of the co-existence of work and home)	3 teleworkers and their families (part of a sample of 25 teleworkers).	Case studies.
Dimitrova (2003)	Telework (mainly homeworkers)	Teleworkers work longer hours / telework does not solve managerial problems (pre-existing social inequalities and relations) or establish democratic procedures based on trust and abolition of hierarchical structures.	90 employees of whom 57 teleworkers in a Canadian telecommunications company.	Qualitative case study.
Madsen (2003)	Home-based teleworking (work from home at least 2 days per week).	Teleworkers have less work-family conflict / work-family conflict depends on gender, health, number of hours	221 teleworkers and non-teleworkers from 7 corporate organisations in the USA.	Survey-questionnaire.

		worked (the more hours worked, the more strain for teleworkers) and number of children.		
Felstead et al (2003)	Work at home.	Work at home may create managerial problems which are based on lack of presence and visibility; the solution may be the developing of trust.	120 professionals or managers that work from home or are involved in management of homeworkers in the UK.	Interviews.
Vittersø et al. (2003)	Telework (work from home).	A negative path from teleworker to partner's overall satisfaction (mainly due to withdrawal, overworking – average 10 hours per week more than their contract – lack of boundaries and spillovers effects).	217 teleworkers and 112 partners completed questionnaires whilst 89 (42 workers, 18 partners, 8 children, 3 friends, 9 managers and 9 colleagues) were interviewed. Teleworkers were chosen from 4 countries: Iceland, Norway, Portugal and the UK.	Survey and interviews.
Harrington & Walker (2004)	Telework (home or telecommuting centres)	Teleworkers need training in ergonomics / telework can cause pain or discomfort / training improves results.	50 teleworkers mainly from federal agencies in the USA.	Survey before and after offering training to teleworkers.
Haddon & Brynin (2005)	Telework (includes homeworkers).	Net homeworkers (those who work from home by using internet) are usually male, professional and relatively highly paid. Female homework is associated with relatively high-status work and not routine and low-paid jobs / research suggests that telework is about teleworkers and not about the nature of work itself.	1750 homes in 6 countries (Bulgaria, Germany, Israel, Italy, Norway, UK).	Household survey.
Felstead et al. (2005)	Home-located workers.	'... <i>uncertainty, ambiguities and unpredictability</i> ' in relationships, first, between homeworkers and other residents of their home and, second, between homeworkers and their managers	60 professional and managerial employees who work at home in the UK, their 60 partners and 82 line-managers, directors and policy makers.	Interviews and over 300 photographs of employees' workstations and surrounding areas.
Nunes (2005)	Telework (homeworking, group-based teleworking, flexiwork).	Telework is a way to reduce operational costs (as by weakening	Enterprises in Portugal.	Secondary data analysis.

		contracts). A better spread of telework demands a change of traditional organisational procedures.		
Tietze & Musson (2005)	Telework (work from home 1-3 days per week or sporadically, but for a long period of time).	There is a need for management of disruptions caused by other family members.	25 teleworkers (management professionals) and their families in the UK.	Mainly semi-structured interviews.
Greenhill & Wilson (2006)	Telework (homework).	Telework does not change gender roles / it may increase conflicts inside the family.		Dialectical & Marxist analysis.
Valsecchi (2006)	Home-located employees	Electronic monitoring has limits / isolation & 'goldfish syndrome' (happy where they are and do not want to return to the office)	Eight home-located call-centre operators in a big telecommunications company in Italy, 7 line managers, 4 senior managers and 1 trade-union employee.	Semi-structured interviews.
Peters & Van der Lippe (2007)	Telehomeworking. Homeworkers are defined as employees who work less than a day per week (occasional users) from home, one day per week (light users) from home and more than a day per week from home (heavy users).	High level of strain and longer working hours are present.	467 male and 340 female workers at 30 Dutch organisations.	Interviews.
Sullivan & Smithson (2007)	Homework.	Flexible work does not change roles in traditional couples / it helps only when couples are willing to change.	12 homeworkers and 12 co-residents.	Interviews.
Wilks & Billsberry (2007)	Self-employed teleworkers (home-anchored worker)	Isolation (it is mentioned only by one employee who describes herself and another one who speculates that other employees may feel like that) / telework reduces travelling for work but increases travelling for shopping / teleworkers cannot be treated as a single group.	8 self-employed home-based workers in a rural area of the UK.	Semi-structured interviews.

Golden (2008)	Flexible working hours and work at home (at least once per week).	Working longer than standard hours is strongly associated with having work-at-home (usually for bringing work home from office). Married workers are more likely to have work at home while it is the opposite case for divorced, widowed or separated workers. Having pre-school children raises the probability of working at home.	50,000 households (118,323 members) in the USA.	Survey conducted in 2001.
Lai & Burchell (2008)	Work from home.	WFH creates feeling of isolation.	4 home-based directors of a consultancy firm.	Case study (Semi-structured interviews, observation and diaries).
Hilbrecht et al. (2008)	Telework (work from home).	Telework helps with childcare and obtaining better balance; it helps with older people and pets care and it is family friendly but not gender equitable.	18 working mothers at a financial firm in Canada.	Semi-structured interviews.
Whittle & Mueller (2009)	Telework.	Telework can create social isolation.	A team of 10 management consultants employed by a large technology-sector European firm.	Ethnographic study (observation, semi-structured interviews, follow-up visits).
O'Neil et al (2009)	Telework (home-based).	Teleworkers spend more hours working than non-teleworking counterparts (about 10 per cent more). Telework success depends on personality traits / situational factors and job characteristics may influence outcome.	156 employees from 8 Canadian public and private organisations.	Survey.
Wight and Raley (2009)	Work at home.	Women work fewer hours when they work from home than colleagues who work on-site.	1098 employees in the USA.	Interviews and diaries.
Tietze et al. (2009)	Homebased work.	It does not manage to change existing structural and gendered division of		Literature review (2000-2009)

		labour.		
Tietze & Nadin (2011)	Work from home.	Change in psychological contract / withdrawing homeworking can lead employee to leave the company / problems with managerial control / no isolation problems / problems with those left behind.	7 women in a local-authority organisation in the UK.	Qualitative case study (21 interviews).
Nätti et al. (2011)	Homework.	WFH is linked to longer working hours.	4587 employees in Finland.	Secondary data analysis.
Golden & Fromen (2011)	Telework (absence from office for a portion of week) and virtual work (full-time absence from office and living in different geographical area).	Telework and virtual managers can create problems to their subordinates due because of their absence from the office.	11,059 employees of a Fortune 500 company in the USA.	Secondary data analysis.
Hilbrecht et al. (2013)	Telework (full and part-time work at home).	Telework has little effect on changing household and gender activities.	51 teleworkers in a financial organisation in Canada.	Short survey and semi-structured interviews.
McNaughton et al (2014)	Telework (work from home at least 10 hours per week)	Longer hours of work (but, as a result, reducing commuting time) / feelings of isolation / technical and equipment problems (slow connectivity speed) / difficulty in separating home and work environments.	9 individuals with disabilities (8 with cerebral palsy and 1 with autism) who work from home.	Focus groups, conducted on the internet.

Appendix 3: The Nuremberg Code

(US Government Printing Office, 1949: no page):

'The voluntary consent of the human subject is absolutely essential. This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice, without the intervention of any element of force, fraud, deceit, duress, over-reaching, or other ulterior form of constraint or coercion; and should have sufficient knowledge and comprehension of the elements of the subject matter involved, as to enable him to make an understanding and enlightened decision. This latter element requires that, before the acceptance of an affirmative decision by the experimental subject, there should be made known to him the nature, duration, and purpose of the experiment; the method and means by which it is to be conducted; all inconveniences and hazards reasonably to be expected; and the effects upon his health or person, which may possibly come from his participation in the experiment. The duty and responsibility for ascertaining the quality of the consent rests upon each individual who initiates, directs or engages in the experiment. It is a personal duty and responsibility which may not be delegated to another with impunity.

The experiment should be such as to yield fruitful results for the good of society, unprocurable by other methods or means of study, and not random and unnecessary in nature.

The experiment should be so designed and based on the results of animal experimentation and knowledge of the natural history of the disease or other

problem under study, that the anticipated results will justify the performance of the experiment.

The experiment should be so conducted as to avoid all unnecessary physical and mental suffering and injury.

No experiment should be conducted, where there is an a priori reason to believe that death or disabling injury will occur; except, perhaps, in those experiments where the experimental physicians also serve as subjects.

The degree of risk to be taken should never exceed that determined by the humanitarian importance of the problem to be solved by the experiment.

Proper preparations should be made and adequate facilities provided to protect the experimental subject against even remote possibilities of injury, disability, or death.

The experiment should be conducted only by scientifically qualified persons. The highest degree of skill and care should be required through all stages of the experiment of those who conduct or engage in the experiment.

During the course of the experiment, the human subject should be at liberty to bring the experiment to an end, if he has reached the physical or mental state, where continuation of the experiment seemed to him to be impossible.

During the course of the experiment, the scientist in charge must be prepared to terminate the experiment at any stage, if he has probable cause to believe, in the exercise of the good faith, superior skill and careful judgement required of him, that a continuation of the experiment is likely to result in injury, disability, or death to the experimental subject.'

Appendix 4: Monitor's responsibilities

The full list of monitor's responsibilities as described by the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (1996: 27-28):

'The monitor(s) in accordance with the sponsor's requirements should ensure that the trial is conducted and documented properly by carrying out the following activities when relevant and necessary to the trial and the trial site:

(a) Acting as the main line of communication between the sponsor and the investigator.

(b) Verifying that the investigator has adequate qualifications and resources and remain adequate throughout the trial period, that facilities, including laboratories, equipment, and staff, are adequate to safely and properly conduct the trial and remain adequate throughout the trial period.

(c) Verifying, for the investigational product(s):

(i) That storage times and conditions are acceptable, and that supplies are sufficient throughout the trial.

(ii) That the investigational product(s) are supplied only to subjects who are eligible to receive it and at the protocol specified dose(s).

(iii) That subjects are provided with necessary instruction on properly using, handling, storing, and returning the investigational product(s).

(iv) That the receipt, use, and return of the investigational product(s) at the trial sites are controlled and documented adequately.

(v) That the disposition of unused investigational product(s) at the trial sites complies with applicable regulatory requirement(s) and is in accordance with the sponsor.

(d) Verifying that the investigator follows the approved protocol and all approved amendment(s), if any.

(e) Verifying that written informed consent was obtained before each subject's participation in the trial.

(f) Ensuring that the investigator receives the current Investigator's Brochure, all documents, and all trial supplies needed to conduct the trial properly and to comply with the applicable regulatory requirement(s).

(g) Ensuring that the investigator and the investigator's trial staff are adequately informed about the trial.

(h) Verifying that the investigator and the investigator's trial staff are performing the specified trial functions, in accordance with the protocol and any other written agreement between the sponsor and the investigator/institution, and have not delegated these functions to unauthorized individuals.

(i) Verifying that the investigator is enrolling only eligible subjects.

(j) Reporting the subject recruitment rate.

(k) Verifying that source documents and other trial records are accurate, complete, kept up-to-date and maintained.

(l) Verifying that the investigator provides all the required reports, notifications, applications, and submissions, and that these documents are accurate, complete, timely, legible, dated, and identify the trial.

(m) Checking the accuracy and completeness of the CRF entries, source documents and other trial-related records against each other. The monitor specifically should verify that:

(i) The data required by the protocol are reported accurately on the CRFs and are consistent with the source documents.

(ii) Any dose and/or therapy modifications are well documented for each of the trial subjects.

(iii) Adverse events, concomitant medications and intercurrent illnesses are reported in accordance with the protocol on the CRFs.

(iv) Visits that the subjects fail to make, tests that are not conducted, and examinations that are not performed are clearly reported as such on the CRFs.

(v) All withdrawals and dropouts of enrolled subjects from the trial are reported and explained on the CRFs.

(n) Informing the investigator of any CRF entry error, omission, or illegibility. The monitor should ensure that appropriate corrections, additions, or deletions are made, dated, explained (if necessary), and initialed by the investigator or by a member of the investigator's trial staff who is authorized to initial CRF changes for the investigator. This authorization should be documented.

(o) Determining whether all adverse events (AEs) are appropriately reported within the time periods required by GCP, the protocol, the IRB/IEC, the sponsor, and the applicable regulatory requirement(s).

(p) Determining whether the investigator is maintaining the essential documents.

(q) Communicating deviations from the protocol, SOPs, GCP, and the applicable regulatory requirements to the investigator and taking appropriate action designed to prevent recurrence of the detected deviations.'

Appendix 5: Guideline for semi-structured interviews

1.0 Questions for CRAs	Source of inspiration and interpretation
1.1 Work-Life Balance	
1.1.1 How often do you work from home?	Authors do not agree about the definition of telework/WFH (Collins, 2005; Tietze et al., 2009; Wheatley, 2012); there is a need to define how many days per week an employee spends at home.
1.1.2 How many days in an average week do you spend working from home, a hospital or headquarters?	
1.1.3 How do you find WFH?	The question targets CRAs' overall evaluation of their working life as WFH is linked with quality of life (Duxbury and Higgins, 2002) and good work-life balance (Collins, 2005; Maruyama et al., 2009)
1.1.4 Do you prefer to work from home or office and why?	Homeworking improves employees' well-being (Redman et al., 2009).
1.1.5 How do you find this style of working concerning other aspects of your everyday life? Do you find it positive or negative?	
1.1.6 Do you have children? How old are they?	Flexible work arrangements, in general, and WFH, in particular, can be beneficial for those with children (Felstead et al., 1996; Vermaas and Bongers, 2007; Maruyama and Tietze, 2012; Allen et al., 2013). WFH gives the opportunity for leisure (Hilbrecht et al., 2013) and for participating in the local community (Duxbury and Higgins, 2002).
1.1.7 Does WFH help you with childcare or not? Do you think that WFH can be helpful with childcare? (When participant declared that he/she has no children): How do you find WFH concerning social contacts, leisure time, habits and interests?	
1.1.8 Do you feel that you have a balance between work and personal life? Does WFH help you or not?	Teleworking increases satisfaction with WLB (Collins, 2005; Redman et al., 2009).
1.1.9 Does WFH solve or create problems?	Telework may increase work-family conflict (Duxbury and Higgins, 2002) or create a negative path from teleworker to partner's overall satisfaction (Vittersø et al., 2003).
1.1.10 Tell me about domestic jobs. Is it helpful or not to work from home?	Domestic jobs can be arranged easier (Tietze et al., 2009) but very often domestic jobs are linked with only

	female home-based workers (Felstead et al., 2002).
1.1.11 Do you have an elderly or disabled person to take care of?	WFH can be helpful with dependent care responsibilities (Joice and Verive, 2006; Major et al., 2008)
1.1.12 Do you have a pet?	WFH helps with pet care (Hilbrecht et al., 2008).
1.1.13 How do other members of family feel that you work from home?	Very often, co-residents feel that they lose space and this can cause conflict; women are more likely to report conflict and problems relating to space (Sullivan, 2000)
1.1.14 Would you consider changing company if you lose this mode of work and have to return to the office or not?	Commitment to the mode of work and not the organisation may be a problem (Tietze and Nadin, 2011).
1.2 Costs	
1.2.1 Do you think that you reduce personal costs when WFH?	WFH reduces personal costs (Duxbury and Higgins, 2002).
1.2.2 Do you live near to the organisation's premises?	Telework expands the talent pool (Kurland and Bailey, 1999)
1.2.3 What kind of costs do you save, if you save, when WFH?	WFH reduces personal costs (Duxbury and Higgins, 2002).
1.2.4 Are there any bills or other costs that have been increased as a result of WFH?	
1.2.5 Do you feel that WFH is used by the organisation to reduce costs? Do you think it reduces costs? (If yes, then what kind of costs?)	
1.2.6 Generally, why do you think that the company has implemented the WFH approach?	There is evidence that the growth of telework is a result of the fall in its costs (mainly IT costs) (Oettinger, 2011).
1.3 ICTs	
1.3.1 Do you prefer to work using a PC or laptop? Do you find any difference?	Telework increases IT risks because of the decentralised nature of the employees' work (Overmyer, 2011; Peacey, 2006; Pyöriä, 2011). Implementation of teleworking can create IT problems which may not be expected (Collins, 2005).
1.3.2 Have you experienced any IT problems when working from home?	
1.3.3 How did you face them? What kind of help have you asked for and from whom?	
1.3.4 Do you think that WFH can cause IT problems?	
1.3.5 Do you need a printer, fax or	

phone landline? Generally, do you lack at home any machinery that exists at the office?	
1.3.6 Have you ever felt that you are losing time to solve an IT problem that you would not be losing if you were working from the office? If yes, how often does it happen?	
1.3.7 Do you think that your laptop is protected against threats?	
1.3.8 Where are you working from when at home?	Teleworkers need training in ergonomics as telework can cause pain or discomfort (Harrington and Walker, 2004).
1.3.9 Do you have any concerns about ergonomics when WFH?	
1.4 Performance	
1.4.1 How do you find your overall performance as a result of WFH?	
1.4.2 How do you compare your home-based job with other jobs that you had when you had to work from the office?	Working away from the office improves performance (Stavrou, 2005; Major et al., 2008).
1.4.3 How do you find your working hours? Do you work after 17:00? Do you work on weekends? What time do you usually start working? How do you compare your working hours with the working hours of office-based colleagues?	WFH has been accused of bringing about longer hours (Golden, 2008; Dimitrova, 2003; Peters and Van der Lippe, 2007; Nätti et al., 2011).
1.4.4 Have you received training for working from home? If yes, what kind? If you did not, do you think a new CRA should receive some kind of training? Can you give some examples?	According to Overmyer (2011), teleworkers need to be trained in remote working, but according to Baker et al. (2006), training of home-based employees is not related to the outcome.
1.4.5 Do you think that WFH influences absenteeism?	Working away from office reduces absenteeism (Stavrou, 2005; Duxbury and Higgins, 2002).
1.4.6 Do you have any problems concerning your communication with the clinical trial teams or the office (for example, irregular time callings)?	Some people (outside the office) may think that teleworkers do not work (Duxbury and Higgins, 2002).
1.4.7 Do you have any problems with other members of the family or friends when working,	Co-residents feel that they lose space and this can cause conflict, whilst women are more likely to report

such as sharing rooms or disruptions?	conflict and problems relating to space (Sullivan, 2000). WFH may create ' <i>uncertainty, ambiguities and unpredictability</i> ' between homeworkers and other residents of their home (Felstead et al., 2005).
1.4.8 Do you feel that sometimes people do not realise that you work when you are at home?	The disadvantages to employees are: social isolation, overwork, work-family conflict, conflict with office-based colleagues, costs of setting up a home-based office (Duxbury and Higgins, 2002)
1.4.9 Are there any drawbacks you can identify as a result of WFH?	
1.5 Management/Supervision	
1.5.1 What kind of tools/ways do you use to communicate with all the stakeholders (managers, secretaries, investigators, trial nurses etc.)?	<i>'Communication is increasingly characterised by a complex interplay between computer-mediated communication [emphasis on emails] and face-to-face...'</i> (O'Kane and Hargie, 2007: 20).
1.5.2 Do you use Skype or BB Messenger at all?	IBM Canada uses instant messaging and collaboration software for surveillance and communication reasons (Leung, 2008).
1.5.3 How often do you visit the organisation's premises for meetings or for communication with your line manager or a member of the management team?	Telecommuting is associated with autonomy and a positive effect on the employee-manager relationship (Gajendran and Harrison, 2007). Trust and commitment need to replace control and coordination in the case of home-based telework (Peters et al., 2010).
1.5.4 How often do you communicate with your line manager when you are away from the premises (at home or at a site)?	
1.5.5 Do you think that the lack of presence creates problems with other colleagues or managers who work from Garden's premises?	
1.5.6 Are there things that you would like to clarify but you do not because you are not there? How do you manage all these things?	
1.5.7 Do you communicate with other colleagues to clarify any issues you may have and/or ask for help?	Teleworking creates a feeling of 'us and them' among office-based and home-based employees (Collins, 2005). Telework is associated with non-teleworkers' dissatisfaction (Golden, 2007).

1.5.8 Do you feel that employees who work from home are sometimes neglected in promotion opportunities or not?	Teleworking is linked with perceptions of hindered career development and fewer opportunities for training (Collins, 2005; Redman et al., 2009) and a decrease in sharing knowledge (Vermaas and Bongers, 2007).
1.5.9 Do you feel that you lose any part of the 'news' of the organisation because of your absence from the premises?	
1.5.10 Generally, do you feel that you have problems because you are not physically present at the office?	This is a generic question to unveil new topics.

1.0 Questions for CTAs	Source of inspiration for researching the topic
2.1 Do you always work from the office?	Teleworking creates a feeling of 'us and them' among office-based and home-based employees (Collins, 2005). Telework is associated with non-teleworkers' dissatisfaction (Golden, 2007). Telework and virtual managers can create problems for their subordinates because of their absence from the office (Golden and Fromen, 2011).
2.2 How often do you communicate with a CRA?	
2.3 What kind of communication do you have?	
2.4 Do you mainly receive or send information to/from CRAs?	
2.5 Do you find easy to work with staff who are not physically present at the office?	
2.6 Is there any difference for you in whether other colleagues work from office or home?	
2.7 How do you store things (files, envelopes, trial documents) that you have to give to CRAs when they are not here (if there are any such things)?	
2.8 Is there anything you would like to mention about working with people who work from home (managers or CRAs)?	

3.0 Questions for Trials System Executive (IT expert)	Source of inspiration for researching the topic
1.1 How often do you work from home? Are you able to work from home on more days?	The growth of telework has been driven (among other factors) by the improved performance of ICT

1.2 Would you say that it is easy to work from home?	<p>(Duxbury and Higgins, 2002). Technical support (as well as other factors) is correlated with the satisfaction of home-based employees (Baker et al, 2006). Telework increases IT risks (Peacey, 2006; Pyöriä, 2011) and measurements are needed to protect the organisation's data (Overmyer, 2011). Electronic monitoring has limits (Valsecchi, 2006).</p>
1.3 Is there any difference between using a laptop and using a PC? (Question is about security issues).	
1.4 Do you need any tools (software) that you do not have at home and are only on your PC at the office?	
1.5 Are there any risks when people work from home? Is there any difference when working outside the organisation's premises?	
1.6 What is more risky concerning attracting virus and malware? Is it working inside the premises or outside? How can we reduce these risks?	
1.7 Is the user the same (about IT behaviour) when WFH or not?	
1.8 Does the workforce have important information in their laptops or are all significant things on the main server?	
1.9 What kind of hardware can workers use to protect their data?	
1.10 What about software?	
1.11 What other devices could workers use for remote working?	
1.12 Do workers use remote scanners?	
1.13 Can you help people when not physically seeing them when they ask for help? Are emails and mobiles enough?	
1.14 How often do CRAs need your IT help?	
1.15 What kind of problems can a non-IT-expert CRA face when working from home?	
1.16 How can a CRA avoid IT problems when working from home?	
1.17 What things can be done to improve security?	
1.18 Finally, do you have any general comments or issues I may have missed, concerning IT and WFH?	

4.0 Questions for Managers	Source of inspiration for researching the topic
4.1 How did the idea of WFH start in the organisation? What was the reason to implement HBW plans?	Organisations implement WFH to reduce costs (Duxbury and Higgins, 2002; Kurland and Bailey, 1999; Hilbrecht et al., 2013), to increase performance (Martinez-Sanchez et al., 2007; Jaakson and Kallaste, 2010) and competitiveness (Offstein et al, 2010), to improve organisational image (Pyöriä, 2011) and retention rates (Harker-Martin and MacDonnell, 2012) etc.
4.2 What are the benefits for the organisation in having home-based employees?	
4.3 Do you work from home? How do you find WFH? Could you work more days from home?	Organisational and job-related factors influence productivity more than work styles and household characteristics (Baker et al., 2006).
4.4 How easy is it to manage CRAs who work from home? Any difficulties?	Good tele-leaders should trust employees and be result- and not process-oriented (Offstein et al., 2010). Trust and commitment needs to replace control and coordination (Peters et al., 2010). Working at home may create managerial problems based on lack of presence and visibility; the solution may be the developing of trust (Felstead et al., 2003). Telework success depends on personality traits; situational factors and job characteristics may influence the outcome (O'Neill et al., 2009).
4.5 Is there any difference for you that you cannot physically see them? Is lack of visibility a problem or not?	
4.6 Would you evaluate this organisation as flat-modern or bureaucratic-old fashioned?	Telework can operate successfully in bureaucratic organisations (Taskin, 2010).
4.7 Is there any difference for you when you are WFH?	Lack of visual monitoring and difficulty in arranging meetings may create problems (Duxbury and Higgins, 2002). Employees may consider tele-managers' absence from office as problematic regarding aspects such as feedback and empowerment (Golden and Fromen, 2011).
4.8 What are your personal benefits when WFH?	Employees' benefits can include: fewer interruptions at office; reduced commuting time and personal expenses; use of flexible working hours; improved working

	environment; better control, morale and quality of life (Kurland and Bailey, 1999; Duxbury and Higgins, 2002).
4.9 How would you evaluate your performance when compared with working from the office? Any problems?	WFH is associated with fewer interruptions (Duxbury and Higgins, 2002). WFH increases employees' productivity and overall performance (Collins, 2005; Stavrou, 2005; Martinez-Sanchez et al., 2007; Vermaas and Bongers, 2007; Gajendran and Harrison, 2007; Major et al., 2008; Jaakson and Kallaste, 2010; Harker-Martin and MacDonnell, 2012).
4.10 What kind of methods do you use to communicate with CRAs (mobile, email etc.)?	The question targets the investigation of the use of ICT (in particular, email) in communication with subordinates (mainly SCRA and CRAs). (See O'Kane and Hargie (2007) about the use of email).
4.11 Can you think of any other ways that you could implement to communicate with them?	
4.12 Do you think there is space for more WFH for other employees?	Telework success depends on personality traits; situational factors and job characteristics may influence the outcome (O'Neill et al., 2009).
4.13 How do you think people that stay behind working late feel about those that work from home?	Telework and virtual managers can create problems for their subordinates because of their absence from the office (Golden and Fromen, 2011). Telework can create conflict with office-based colleagues (Duxbury and Higgins, 2002; Collins, 2005).
4.14 Do you think there might be something from the office environment that people who work from home miss?	This question focuses on the materials that may be located in premises, to which home-based employees may not have access from home (if there are such materials).
4.15 How would you evaluate WFH concerning the organisation's costs?	Organisations implement WFH to reduce costs (Duxbury and Higgins, 2002; Kurland and Bailey, 1999; Hilbrecht et al., 2013), to increase performance (Martinez-Sanchez et al., 2007; Jaakson and Kallaste, 2010) and competitiveness (Offstein et al, 2010), to improve organisational image (Pyöriä, 2011) and retention rates (Harker-Martin and MacDonnell, 2012) etc.
4.16 How would you evaluate WFH concerning home-based employees' performance?	
4.17 How would you evaluate WFH concerning IT implications?	
4.18 How would you evaluate WFH concerning overall management and supervision?	
4.19 How would you evaluate WFH concerning employees' WLB?	
4.20 Would you advise a company	

to implement WFH plans or not and why?	
--	--

5.0 Questions for Trainers	Source of inspiration for researching the topic
5.1 Do you ever work from home? How often?	According to Overmyer (2011), teleworkers need to be trained in remote working, but according to Baker et al. (2006), training of home-based employees is not related to the outcome. Teleworkers need training in ergonomics as telework can cause pain or discomfort (Harrington and Walker, 2004).
5.2 How often do you have contact with CRAs?	
5.3 How do you communicate with CRAs? (i.e. telephone only, email or other or a mix of these?)	
5.4 Are there any problems concerning CRAs and training?	
5.5 Is there any specific training for CRAs?	
5.6 Does training include any advice for the mode of WFH?	
5.7 Do you know whether there is special training in ergonomics or use of laptops when working from home?	

6.0 Demographics to be asked about after the interview (all interviewees)

6.1 Sex: (male, female)

6.2 Age Group: boxes with decades (20-29, 30-39, 40-49...)

6.3 Marital Status: I live with my partner / I live alone

6.4 No. of people that live in my flat / house

6.5 No. of dependants

6.6 No. of kids

6.6.1 Age of kid 1

6.6.2 Age of kid 2

6.6.3 Age of kid 3

6.7 Years in the same position

6.8 Years in monitoring of clinical trials

6.9 Years working as CRA (only for CRAs)

6.10 Years working from home

6.11 How often do you work from home?

Appendix 6: Study Information Sheet

Dear Participant,

Thank you very much for agreeing to participate in this study. This information sheet provides information about this study and how I would like you to take part in it. The purpose of this study is to explore the home-based mode of work in the clinical-trials sector and particularly to investigate elements of the everyday working life of home-based Clinical Research Associates (CRAs). Emphasis will be given to the advantages and disadvantages of working from home regarding issues such as balance between work and personal life, costs, performance, IT implications and management.

The research is conducted by the University of Bradford (School of Management) and is purely academic as it is part of my PhD.

In order to elicit your view, I would like you to be interviewed. If you agree to this, the interview will be audio recorded while it will last less than an hour.

The information provided by you in the interview will be used for research purposes. It will not be used in a manner which would allow identification of your individual responses while anonymity and confidentiality can be considered as granted. Pseudonyms will be used when there is a need to mention a participant in the research.

The ethics approval for this study has been given by the Humanities, Social Sciences and Health Studies Research Ethics Panel at the University of Bradford on 19th December 2013.

Once again, I would like to thank you for agreeing to take part in this study. Also, if you know any other employees from other organisations that you may think can participate in, and contribute to, my overall research as they work from home as CRAs, please do not hesitate to mention them to me. It would be more than helpful. If you have any questions about the research, please do not hesitate to contact me for any further clarification.

Kind Regards

Andreas Chronopoulos
PhD student

A.Chronopoulos@student.bradford.ac.uk
School of Management
University of Bradford
Emm Lane
Bradford
BD9 4JL

Appendix 7: Interview Consent Form

(Based on Bryman, 2012: 141)

I, the undersigned, have read and understood the study information sheet which was provided to me earlier and which informed me about the research of Home-Based-Work in Clinical Trials. I have been given the opportunity to ask questions about the study and I understand that taking part in the study will include being interviewed and audio recorded. I have been given plenty of time to consider my decision and I agree to take part in the study. I understand that my personal details, such as name and employer address, will not be revealed to people outside the project. I understand that my words may be quoted in publications, reports, web pages and other research outputs but my name will not be used. I agree to assign the copyright I hold in any material related to this project to the researcher, Andreas Chronopoulos. I understand that I can withdraw from the study at any time and I will not be asked any questions about why I no longer want to take part.

Name of Participant:

Date:

Researcher Signature:

Date:

Appendix 8: Top Jobs in Public Sector and Salaries

Jobs	Annual base salary
Cabinet Secretary	£220,000
Lord Chief Justice	£225,000
Chief of the Defence Staff (2007)	£209,000-£221,000
Prime Minister	£189,000
NHS Trust Chief Executive (2006)	£240,000 (an additional reward of £20,000 was given as a bonus)

Source: Dymond and Murlis (2009)