CIVIL RESPONSIBILITY FOR DAMAGE CAUSED BY ARTIFICIAL INTELLIGENCE

THEA LEIGH MICALLEF

Thesis submitted in partial fulfilment of the Degree of Doctor of Laws (LL.D)

Faculty of Laws, University of Malta

May 2016
University of Malta Library – Electronic Thesis & Dissertations (ETD) Repository

The copyright of this thesis/dissertation belongs to the author. The author’s rights in respect of this work are as defined by the Copyright Act (Chapter 415) of the Laws of Malta or as modified by any successive legislation.

Users may access this full-text thesis/dissertation and can make use of the information contained in accordance with the Copyright Act provided that the author must be properly acknowledged. Further distribution or reproduction in any format is prohibited without the prior permission of the copyright holder.
DECLARATION OF AUTHENTICITY FOR LLD STUDENTS

Student’s I.D. /Code: 75492(M)
Student’s Name & Surname: Thea Leigh Micallef
Course: Doctor of Laws (LL.D)

Title of Dissertation: Civil responsibility for damage caused by artificial intelligence

I hereby declare that I am the legitimate author of this Dissertation and that it is my original work.

No portion of this work has been submitted in support of an application for another degree or qualification of this or any other university or institution of higher education.

I hold the University of Malta harmless against any third party claims with regard to copyright violation, breach of confidentiality, defamation and any other third party right infringement.

As a Master’s student, as per Regulation 58 of the General Regulations for University Postgraduate Awards, I accept that should my dissertation be awarded a Grade A, it will be made publicly available on the University of Malta Institutional Repository.

17.05.2016
Date

11.06.2015
Abstract

Keywords: liability – artificial intelligence – tort – product liability – personhood

The aim of this thesis is to determine whether the legal frameworks currently available in Malta are sufficient to allocate responsibility and to cater for damage caused by artificial intelligence which acts autonomously from the wills of its creators, users and owners.

The thesis starts off by examining the current technological scenarios as regards robots, expert systems and artificial intelligence. This shows how the development of forms of artificial intelligence poses critical questions as to who should be held liable for damage caused by the operation of these machines.

The Product Liability regime is explored to determine whether this form of liability can be applied in cases where the AI causes damage to a third party through its conduct. Given that product liability can develop only once there exists a defect in the product, it follows that if the AI functions properly as was intended by its creators, product liability cannot subsist.

Therefore, the thesis explores other possibilities for allocating liability through the application of various other paradigms of legal responsibility. The provisions concerning direct and indirect liability under tort law are examined in detail, and a parallel is drawn between persons who may be held liable for damage caused by AI and the responsibility placed on parents for damage caused by minors on owners/users of animals, on employers for acts of their employees and the French concept of liability of the custodian of the thing.

Subsequently, the thesis also explores certain possible scenarios of how an AI could enter into contractual obligations. An analogy is drawn with the conduct of artificial agents and mandataries under Civil Law. It was determined that similarly to the obstacle encountered when trying to apply direct liability to an AI, an obstacle to the application of agency law to that AI is that an AI is not considered to be a person in the eyes of the law. Hence, the prospect of granting personhood to the AI itself is also investigated in detail.

If the legislative framework remains unchanged, it is likely that most actions to recoup damage resulting from AI injuries are likely to fail. Therefore the thesis concludes that should AI not be granted personhood, legal amendments to our tort law need to be undertaken in order to introduce the concept of liability of the owner of a thing, which would adequately cater for injury caused by AI.
To my parents, Julian and Sharon, 
for their unconditional and relentless support and love

To my fiancé, Finian, 
for all the insights and encouragement in pursuing this thesis
Acknowledgements

Firstly, I wish to express my most sincere gratitude to my supervisor Dr. David Zammit, for his guidance and assistance. His direction, insightful comments and queries incentivised me to widen my research to explore various perspectives.

Furthermore, I would like to thank all my colleagues, past and present, for their patience and support throughout the last few months when I was researching and writing this thesis.

On a more personal note, I am very grateful for my family’s continuous support throughout the whole six years at University and especially in the last few months.

Last but not least, I would like to thank my fiancé for inspiring the idea behind this thesis and for the endless debates on the matter.
# Table of Contents

Abstract ...................................................................................................................... ii

Acknowledgements.................................................................................................. iv

Table of Contents ..................................................................................................... v

Table of Statutes ...................................................................................................... vii
  European Union ....................................................................................................... vii
  France ......................................................................................................................... vii
  Italy ............................................................................................................................ viii
  Malta .......................................................................................................................... viii
  United States of America ......................................................................................... viii
  United Nations ........................................................................................................... ix

Table of Judgments .................................................................................................. x
  Cases in the Kollezzjoni ta’ Deċiżjonijiet tal-Qrat i Superjuri ta’ Malta ....................... x
  Cases available on the Ministry of Justice website .................................................... xi
  Cases available at the Archives of the Courts of Justice ......................................... xii
  Table of Foreign Judgments ...................................................................................... xii
  European Union ....................................................................................................... xii
  France ......................................................................................................................... xii
  United Kingdom ........................................................................................................ xii
  United States of America ......................................................................................... xii

Abbreviations .......................................................................................................... xiv

Introduction ............................................................................................................. 1
  Purpose of the Study ................................................................................................. 2
  Methodology ............................................................................................................. 6

1 Chapter 1: Understanding the Technology ............................................................... 9
  1.1 Definition of a Robot ......................................................................................... 9
  1.2 Definition of Expert Systems .......................................................................... 12
  1.3 Definition of Artificial Intelligence ................................................................. 13
    1.3.1 Definition of Intelligence .......................................................................... 13
    1.3.2 Definition of Artificial Intelligence .......................................................... 18
## 1.4 The Interrelation between Robots, Expert Systems and Artificial Intelligence

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4.1 Expert Systems and Robotics</td>
<td>20</td>
</tr>
<tr>
<td>1.4.2 Expert Systems and Artificial Intelligence</td>
<td>20</td>
</tr>
<tr>
<td>1.4.3 Artificial Intelligence and Robotics</td>
<td>21</td>
</tr>
<tr>
<td>1.4.4 The Epitome of the Triad: Autonomous Vehicles</td>
<td>22</td>
</tr>
</tbody>
</table>

## 2 Chapter 2: Product Liability

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Product Liability based on the Maltese Civil Code</td>
<td>29</td>
</tr>
<tr>
<td>2.1.1 Warranty against Latent Defects</td>
<td>30</td>
</tr>
<tr>
<td>2.2 Product Liability under the Consumer Affairs Act and the Product Liability Directive</td>
<td>32</td>
</tr>
<tr>
<td>2.2.1 Definition of the term “defective product”</td>
<td>33</td>
</tr>
<tr>
<td>2.2.2 Who is to be held liable under Product Liability?</td>
<td>34</td>
</tr>
<tr>
<td>2.2.3 The Development Risk Defence</td>
<td>35</td>
</tr>
<tr>
<td>2.3 Is Product Liability the best option for apportioning liability in damages caused by Artificial Intelligence?</td>
<td>37</td>
</tr>
<tr>
<td>2.4 Conclusion</td>
<td>39</td>
</tr>
</tbody>
</table>

## 3 Chapter 3: Elements of Tortious Liability

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Dolus or culpa</td>
<td>44</td>
</tr>
<tr>
<td>3.2 Unjust Act</td>
<td>45</td>
</tr>
<tr>
<td>3.3 Unskillfulness and Professional Negligence</td>
<td>48</td>
</tr>
<tr>
<td>3.4 Causal Link</td>
<td>52</td>
</tr>
<tr>
<td>3.4.1 Interruption of the Causal Link</td>
<td>56</td>
</tr>
<tr>
<td>3.5 Contributory Negligence and Multiple Tortfeasors</td>
<td>59</td>
</tr>
<tr>
<td>3.6 Liability of the AI itself</td>
<td>61</td>
</tr>
<tr>
<td>3.7 Conclusion</td>
<td>62</td>
</tr>
</tbody>
</table>

## 4 Chapter 4: Indirect Liability in Tort

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Imputability</td>
<td>66</td>
</tr>
<tr>
<td>4.1.1 Indirect Liability of the Employer</td>
<td>67</td>
</tr>
<tr>
<td>4.1.2 Indirect Liability for Minors or persons of Unsound Mind</td>
<td>71</td>
</tr>
<tr>
<td>4.1.3 Indirect Liability of Owners/Users of Animals</td>
<td>77</td>
</tr>
<tr>
<td>4.1.4 Liability of the Custodian/Owner of property</td>
<td>81</td>
</tr>
<tr>
<td>4.2 Conclusion</td>
<td>84</td>
</tr>
</tbody>
</table>

## 5 Chapter 5: Other Contractual Foundations for AI Liability

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Elements of Contract Law</td>
<td>90</td>
</tr>
<tr>
<td>5.1.1 Consent</td>
<td>90</td>
</tr>
</tbody>
</table>
5.2 Agency .................................................................96
5.3 Contractual Relationships ............................................102
5.4 Conclusion ................................................................106

6 Chapter 6: Personhood for Artificial Intelligence ..................108
  6.1 Definition of “Person” ..................................................109
  6.2 Theories of Personhood .................................................111
  6.3 Rights of Juridical Persons ............................................113
  6.4 Liability of the Juridical Person .......................................115
  6.5 Can an AI have a juridical personality? .........................119
    6.5.1 AI as Slaves .......................................................121
    6.5.2 AI as a Corporation ..............................................123
  6.6 Conclusion ................................................................125

7 Conclusion ......................................................................127

APPENDIX A ................................................................133
APPENDIX B ................................................................138
APPENDIX C ................................................................144
APPENDIX D ................................................................150
APPENDIX E ................................................................154

Bibliography .....................................................................163
  Books .............................................................................163
  Academic Articles .........................................................165
  Theses ...........................................................................169
  Other Material ..............................................................170
  Online Sources for Judgments and Legislation ....................174
Table of Statutes

European Union

Liability for defective products [1985] OJ 2 210/29

France

Code Napoléon, and officially Code civil des Français

Italy

Il Codice Civile Italiano

Malta

Civil Code, Chapter 16 of the Laws of Malta

Commercial Code, Chapter 13 of the Laws of Malta

Companies Act, Chapter 389 of the Laws of Malta


Companies Act (Cell Companies Carrying on Business of Insurance) Regulations, L.N. 218 of 2004

Consumer Affairs Act, Chapter 378 of the Laws of Malta

Electronic Commerce Act, Chapter 426 of the Laws of Malta

Interpretation Act, Chapter 249 of the Laws of Malta

The Highway Code

United States of America


Uniform Electronic Transactions Act (UETA) (1999) and Notes to UETA

15 U.S. Code § 7001(h)
United Nations

Table of Judgments

Cases in the Kollezzjoni ta' Deċiżjonijiet tal-Qrati Superjuri ta' Malta

Albert Mizzi noe v. Rev. Prof George Schembri, Volum LXXVI Pt. I p. 212
Anna Stanley v. Alan Zahra, Volum LXXVII (1993), Pt. 3, p. 93
Annunziato D'Amato et vs. Joseph Camilleri et, Volum XLII.A (1958), Pt. 1, S.1, p. 82
Anthony Bugeja v. Carmelo Agius et, Volum LXXV. Pt. II. . 418
Edward Rizzo Ne. Vs Col. Charles E. Dawson Ne, Volum XXXVII.A, Pt. 1, S. 1, p. 183
Formosa v. Borg, Volum LXXVII (1993), Pt. 3, p. 178
Francis Zammit Dimech et noe. v. Commissioner of Police, LXXIII (1989), Pt. 1, p. 154
Giacomo Frendo Azzopardi v. Bartolomeo Bezzina, Volum XV, p. 479
Micallef v. Bondin, Volum LXXXI (1997), Pt. 2, S. 1, p. 581
PLC Fenech Noe v C. Gatt et., Volum XVIII B (1901-1903) Pt. II, p. 164
Paolo Mallia v. Annette Xuereb Montebello, Volum XLVIII.A (1964), Pt. 1, S. 1, p. 20
Pasquale Zerafa v. Carmelo Gauci, Volum XXXIX.D (1955), Pt. 4, p. 799
Sammut v. Azzopardi, Volum LXXVII (1993), Pt. 2, S. 1, p. 368
Tabib Joseph R. Grech v. II-Kummissarju tal-Pulizija, Volum LXXII (1988), Pt. 2, S. 1, p. 199
The Honourable Mabel Strickland OBE noe et v. Joseph James Scorey, Volum XXXIII.G (1949), Pt. 4, p. 941
Victor Savona Pr. Et Ne. Vs Dr. Peter Asphar Et, Volum XXXVI.B (1952), Pt. 1, p.181

**Cases available on the Ministry of Justice website**

Amato Mark Anthony Vs Spagnol Charles, Civil Court, First Hall, per Mr Justice Noel V. Arrigo, 5 October 2001

Attard Leonard sive Leo Vs Camilleri John Et Noe., Civil Court, First Hall, per Mr Justice Joseph R. Micallef, 29 September 2009

Bezzina Patrick Et Noe Vs Ministru Tal-Edukazzjoni U Risorsi Umani, Court of Appeal, 3 October 2008

Bonnici George Noe Vs Ellul Nicholas Et, Civil Court, First Hall, per Mr. Justice Philip Sciberras, 2 February 2005

Borg Tarcisio Noe Vs Kummissarju Tal-Pulizija, Civil Court, First Hall, per Mr. Justice Anthony Ellul, 18 September 2012

Brincat Saviour et. vs. Salina Estates Limited, Court of Appeal, 25 February 2004

D'amato Michael Noe Vs Spiteri Filomena Et, Civil Court, First Hall, per Mr. Justice Philip Sciberras, 3 October 2003

Elmo Insurance Services Et Vs Micallef Joseph Pc 537 Et, Court of Appeal, 5 October 2001

Gauci Joseph vs. MCL Ltd., Court of Appeal, 20 October 2003

Goodwin Brandon Elton pro et noe et vs. Bartolo Anthony pro et noe (Criminal Court of Appeal 31.10. 1938)

Grech Natasha Vs Gl Trading Ltd., Court of Appeal, 18 June 2010

Jones David Et Noe Vs Mifsud Bonnici Dr Giuseppe Noe Et Pen, Court of Appeal, 29 October1993.

Micallef St John Carmelo Et Vs Spiteri Joseph Spiteri Richard Et, Court of Appeal, 15 January 2002

Middle Sea Insurance p.l.c. et. Vs Victor Sammut, Court of Appeal, per Mr Justice Philip Sciberras, 02 June 2003

Pulizija v. Mizzi John, Court of Criminal Appeal (Inferior Jurisdiction), per Mr Justice Vincent De Gaetano, 14th November 2003
The Accountant General vs. Alex Vella on behalf of the G.S Falzon Company Limited, Commercial Court, 27 July 1989

Vella Giovanni Et Vs Cilia Michael, Court of Appeal per. Mr Justice Philip Sciberras, 23 June 2006

Xerri Victor Et Pro Et Noe Vs Sultana Julian Et, Civil Court, First Hall, per Mr Justice Anthony Ellul, 16 September 2009

Cases available at the Archives of the Courts of Justice

Anunziato Pace vs. Anastasia sive Ines Zerafa, Court of Appeal, 13 January 1992 (unpublished)

Dr. Anthony Farrugia ne vs. Carmelo Calleja, Court of Appeal, 28 February 1969 (unpublished)

Dr. Victor Ragonesi noe vs Raymond Mallia, Commercial Court, 30 May 1989

Bezzina Caterina v. Grech Giorgio et, First Hall, Civil Court, 7th June 1938

Table of Foreign Judgments

European Union


France

Cour de Cassation, Ch. Réunies, 13 February 1930, Jand’heur

Cour de Cassation, Ch. Réunies, 2 December 1941, Franck

Cour de Cassation, Chambre civile 2, 28 November 2002, No. 00-20577

United Kingdom

Froom v. Butcher (1976) QB 286

United States of America

Gagliano v. Kaouk, 2012-Ohio-1047 (Court of Appeals of Ohio, 2012)
McDonald v Snelling [1867] 14 Allen 290, 96 Mass. 290

Mracek v. Bryn Mawr Hospital et al, 363 F. App’x 925, 926 (3d Cir. 2010)

United States v. Athlone Industries, Inc., 746 F. 2d 977 - Court of Appeals, 3rd Circuit 1984

Williams v. Desperito, C. A. N09C-10-164-CLS (Superior Court of Delaware, 2011)
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Artificial Agent</td>
</tr>
<tr>
<td>AI</td>
<td>Artificial Intelligence</td>
</tr>
<tr>
<td>CAA</td>
<td>Consumer Affairs Act, Chapter 378 of the Laws of Malta</td>
</tr>
<tr>
<td>CC</td>
<td>The Civil Code, Chapter 16 of the Laws of Malta</td>
</tr>
<tr>
<td>CoA</td>
<td>The Court of Appeal</td>
</tr>
<tr>
<td>DVSS</td>
<td>da Vinci Surgical System</td>
</tr>
<tr>
<td>ES</td>
<td>Expert System</td>
</tr>
<tr>
<td>AV</td>
<td>Automated Vehicle</td>
</tr>
<tr>
<td>PLD</td>
<td>Liability for defective products [1985] OJ 2 210/29</td>
</tr>
<tr>
<td>UAV</td>
<td>Unmanned Aerial Vehicle</td>
</tr>
</tbody>
</table>
Introduction

“If a machine is expected to be infallible, it cannot also be intelligent.” - Alan Turing

The world is rapidly moving towards further integration of autonomous systems into everyday life. These systems act in an independent manner with little, or indeed, no human intervention to reduce human error in highly specialised and delicate fields. In this thesis, I will identify and comment on such technologies and their implications on the current legislation governing civil liability and whether this legislation suffices for the ever-changing dynamics of the human-technology relationship.

In his science fiction novel *I, Robot*, author Isaac Asimov created what are popularly known as the Three Laws of Robotics. Although these are indeed a work of fiction, and therefore far removed from the law, which is necessarily fact-based, the First Law of Robotics described by Asimov is highly reminiscent of the foundation of tort law in the Maltese legal system. The First of Asimov’s Laws states that “A robot may not injure a human being or, through inaction, allow a human being to come to harm.”¹ This can be compared with Article 1033 of the Civil Code (CC) of Malta, which holds that “Any person who, with or without intent to injure, voluntarily or through negligence, imprudence, or want of attention, is guilty of any act or omission constituting a breach of the duty imposed by law, shall be liable for any damage resulting therefrom.”²

² Civil Code (n 2) Article 1033
Technology is advancing at such a phenomenal pace that tools which would have been considered science fiction decades ago are now found in the pockets of almost every person in the developed world. The science fiction film *2001: A Space Odyssey* was perhaps one of the first to portray an intelligent system capable of solving problems and taking action in an independent and very human manner, without further human intervention. The programme in this piece of science fiction, known as HAL, had the ability to make its own decisions based on a set of external inputs, and it continuously learnt and developed its algorithms using such external stimuli. HAL was a clear manifestation of what we now call “Artificial Intelligence” – a machine that can think and decide for itself.

**Purpose of the Study**

In this thesis, the author shall examine various legal theories which may shed some light as to who can be held liable when a machine that is wholly or partially autonomous causes injury to its user or a third person. This will require an analysis and comparison of various different legal paradigms in which liability can be configured, with reference to existing Maltese law within civil domains: tort, contract and other sources of obligations. In this thesis, the focus will be on liability which arises out of tort and contractual obligations, as such the author shall not delve into liability in terms of quasi-delictual or fiduciary obligations.

The machine although sometimes appearing to act autonomously is ultimately the direct result of programming, engineering, design and manufacturing, which can all be traced back to a natural or a legal person. An analysis of current
technological means reveals that we have not yet reached the science fiction levels of purely autonomous machines which are capable of overriding the programmed tasks at hand, such as that envisioned in *2001: A Space Odyssey*. At best, the technology we currently have in this day and age is semi-autonomous in the sense that AI machines are being used by humans as tools rather than replacing humans completely to act in their stead.

The legal relationship between humans and semi-autonomous machines which are currently in the market may be akin to that of agency. The machine is the agent of the principal, who is the human, in the sense that the human programmer or user gives the machine agent a set of tasks to complete using a set of pre-established parameters.

However, fully autonomous machines are not as futuristic as one may think. Indeed, scientists and engineers have already created fully autonomous machines which require no human involvement. These machines are not used by humans as tools, but rather they are mobilised by humans. Such machines are not yet available to the wide public, however some of them have already been tried and tested and will most likely be released to the market within the next few years. Perhaps the most noteworthy of these technologies is the self-driving car.

Once machines become fully autonomous, would it still be wise to consider the relationship that exists between them and man as that of agency? If there is no
agency, then is the law going to treat the machine as its own separate legal entity with the capability of suing or being sued?

In the 1984 case United States v. Athalone Industries Inc, the company was being sued for injury caused due to the defect of one of their batting practice pitcher machines. The Court of Appeals of the Third Circuit found the defendant liable for damages by utilizing the Consumer Product Safety Act. The Court held that “since robots cannot be sued, but they can cause devastating damage, the defendant Athlone Industries, was twice sued as the ultimate responsible distributor of various violations”.³

Although not laws per se, Asimov’s Three Laws of Robotics have inadvertently been used by robotic-ethicists in the last years, in order to shape ethical-thinking with regards to Robotics. These laws are as follows:

First Law: A robot may not injure a human being or, through inaction, allow a human being to come to harm.

Second Law: A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.

Third Law: A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.

Zeroth Law: A robot may not injure humanity, or, through inaction, allow humanity to come to harm.⁴

³ United States v. Athlone Industries, Inc., 746 F. 2d 977 - Court of Appeals, 3rd Circuit 1984
⁴(n 1)
Given this set of ethical regulations, were a robot to be programmed based on these tenets, while also able to think and act independently and decide on matters based on circumstances, it could be faced with what we as humans would see as complex ethical decisions. Hypothetically, if the robot is placed in a situation where a group of people are threatening a nuclear holocaust, in order to ensure the safety of the majority of humans, the robot would arguably need to unilaterally kill said group of people with no directions being given by humans. If the robot believes that the best way to obey the First Law is to in fact violate it, should the programmer be held liable for such a decision that is made purely by the robot? Can this be attributed to a manufacturing defect?

In real life, however engineers and roboticists still have issues with assigning robots with basic visual capabilities and language skills, mainly due to the fact that scientists have not yet fully grasped the complexities of how these systems function in the human body. We are far from a time when humans can agree on a universal ethical or moral code and even further away from imbuing such a code into robots.\(^5\)

Woods and his co-author Robin Murphy of Texas A&M University, composed three laws that try to put the responsibility back on humans. The three new laws that Woods and Murphy propose are:

• A human may not deploy a robot without the human-robot work system meeting the highest legal and professional standards of safety and ethics.
• A robot must respond to humans as appropriate for their roles.
• A robot must be endowed with sufficient situated autonomy to protect its own existence as long as such protection provides smooth transfer of control which does not conflict with the First and Second Laws.  

**Methodology**

The first chapter of this thesis is aimed at understanding the technological advancements that have been made in the last years and recognising their limitations as of the time of writing of this thesis. This chapter will also provide various applications and relationships between the different types of technology that exist nowadays and their legal implications.

The second chapter will analyse the responsibility of producers, manufacturers and programmers which stem from regulations concerning Product liability. The author will also be discussing whether the current regime of Product liability can continue to be fairly applied to damages caused by increasingly advanced technologies.

The third chapter shall list the elements of tort law as developed by Maltese legislation and jurisprudence. The Chapter will also consider the possibility of applying direct liability to the AI itself.

---

The fourth chapter of this thesis will discuss the notion of imputability under tort law. In this Chapter, focus will be given to the forms of indirect liability that can be found within Maltese law and how this reflects upon the allocation of liability for damage caused by AI.

The fifth chapter of the thesis will focus on the contractual foundations which may give rise to AI liability. An analysis will be carried out on whether an agent of artificial intelligence could potentially fall within the ambit of contract law, and whether it is possible for such artificial agents to enter into contractual obligations.

The final chapter of this thesis will delve into the possibility of attributing some form of legal personhood to machines that operate autonomously from the will of their owners, users, producers and programmers. A similarity will be drawn to the possibility of applying the same notions adopted for corporate entities to autonomous machines.

Research conducted in preparation for this thesis consisted of the evaluation of various academic articles and books which deal specifically with the matter of liability to be imposed for damages caused by AI. The main sources for this thesis included the Civil Code of Malta, the Commercial Code of Malta, and judgments of the Courts of Malta together with a number of theses written by local students on these forms of legislation. Various websites were accessed
for information and articles referring to the topic under discussion and for the foreign cases examined in this work.
Chapter 1: Understanding the Technology

With this widespread increase in automated technologies and artificial intelligence, it is opportune that the legal relationship that exists between man and machine be studied in detail and a policy is established for the contingencies which may occur.

This thesis will focus on civil liability arising from contract or delict, and will not be delving into damages incurred through the infringement of property rights and criminal liability which may arise out of accidents involving automated technologies and AI. The ultimate goal of this study is to determine who will compensate a victim, and whether fault can be attributed to any one person or if that fault may be placed upon the machine itself as a separate legal entity.

Nonetheless, in order for one to indicate an appropriate legal solution to these dilemmas, one needs to first understand the technical aspects that surround automated technologies and artificial intelligence.

1.1 Definition of a Robot

Our idea of what a robot is these days is mostly shaped by Hollywood film-producers. If one were to ask an average person to give an example of a robot, the most common examples would be the T-800 Model 101 from The Terminator, Rosie the household assistant from The Jetsons, R2-D2 and C3-P0 from Star Wars or Wall-E. All these examples show that Hollywood attempts to humanise machines by giving them a humanoid appearance or human emotions such as irritation and sadness. However, such advanced machines
are merely plot devices used by movie-makers whereas in reality “robotics” is something very different.

The Robot Institute of America defines a robot as “A reprogrammable, multifunctional manipulator designed to move material, parts, tools, or specialized devices through various programmed motions for the performance of a variety of tasks”\(^7\). Oxford Dictionaries defines it as “A machine capable of carrying out a complex series of actions automatically, especially one programmable by a computer”\(^8\). These terse definitions vary greatly from the science-fiction version of a humanoid machine capable of thinking like a human, feeling human emotions and performing complex physical movements all together.

Essentially, a robot is a machine that has been programmed to carry out tasks without regard to any changing circumstances in its environment. As such, a pair of machine legs that have been programmed to imitate human gait could well do so until they walk into a wall, unless programmed otherwise. At which point, the legs would continue “walking” without actually going anywhere.

As per the definition given above, the most prevalent robots in existence nowadays are industrial robots, which have been developed in order to remove the cumbersome burden placed on human workers in highly risky industries. As a matter of fact, the term “robot” originates from the Czech word “robotnik”\(^7\).

---

\(^7\) Robot Institute of America, 1979
meaning “slave”\textsuperscript{9}, which confirms the original thought of a machine being used as a tool to deal with work that is too tedious or hazardous for humans to perform.

The robotic arm, which is used extensively in the car assembly industry, is in essence a mechanical arm powered by hydraulics or pneumatics which has been programmed to repeat the same movements over and over again, with no margin of error or deviation through the use of motion sensors. The most common use for these arms is to move one part of the car from one place to another. These arms are also often fitted with pressure sensors which tell them exactly how hard they are gripping a particular car part.

Robotic arms have largely replaced the human factor of assembly and manufacturing as they can carry out repetitive tasks without distractions and without getting tired. As such, a hole will always be drilled in the same exact spot, a bolt will always be tightened in the same way, and a metal-plate will always be affixed in the same manner, with a level of consistency that humans are not able to match.

Unfortunately, since these robotic arms are so meticulous and rigid in the carrying out of their tasks they do not observe the environment that surrounds them. Indeed on the 1st of July 2015, a robotic arm tasked with moving auto parts at Volkswagen’s production plant in Germany, fatally crushed a machine operator who unwittingly put himself in the robots programmed path. A

\textsuperscript{9}Capek K., \textit{RUR} (1st edn, Gateway 2013)
Volkswagen spokesman held that human error was to blame for the incident as the machine operates in a very restricted area where there should have been no human interference.\textsuperscript{10}

\subsection*{1.2 Definition of Expert Systems}

A fully-fledged HAL system is not that far-fetched anymore, thanks to the development of what are known as Expert Systems (ES). Edward Feigenbaum of Stanford University has defined ES as \textit{“an intelligent computer program that uses knowledge and inference procedures to solve problems that are difficult enough to require significant human expertise for their solutions.”}\textsuperscript{11}

These ESs are in existence nowadays and are widely used. Thus, an ES can be seen as software that is capable of carrying out complicated decisions through the use of a knowledge-database which is continuously expanding. As their name suggests, Expert Systems apply expert knowledge in order to address specific situations. These ES may be used by professionals as an aid in carrying out their work, however, they can also be used by non-professional users in order to resolve specific problems. The health information website WebMD, for example, where average Internet users can input the symptoms they are feeling, uses its large database to indicate the most possible and probable diseases or conditions which may be ailing the person.

ESs are applied in a wide variety of areas such as diagnosis, planning, forecasting, design, instruction and the giving of professional advice in such

different spheres of knowledge as medicine, business, engineering, architecture and even law.\textsuperscript{12,13}

One need not forget that ultimately, it is a human person who was behind the design of an automated system, and just as a lawyer may give bad or incomplete advice, a system’s programmer may not contemplate all possible scenarios that would make the system foolproof. This may result in the system not performing its functions correctly, which may lead to personal or economic injury.

1.3 Definition of Artificial Intelligence

1.3.1 Definition of Intelligence

The nature of intelligence has always been debated amongst intellectuals. What makes a human intelligent? How can one quantify intelligence? What distinguishes human intelligence from animal or machine intelligence?

The most basic form of animal intelligence is instinct. This is not learned or acquired; it is an innate reaction that all natural persons are born with. Our brain, as we are also animals, has been specifically programmed throughout evolution to run away from fire and fear heights. However, since all animals including humans are born with this “instinct”, can that be considered as being “intelligence”?

\textsuperscript{12} Waterman Donald A., \textit{A guide to expert systems} (1st edn, Addison Wesley Publishing Company 1985)\textsuperscript{39}
As soon as an animal is born, it uses its instinct to acquire new knowledge and abilities. For instance, although a foal is able to stand on its legs almost instantly after birth, it still requires time to learn how to gallop. On the other end of the spectrum, human babies remain virtually completely dependent on adults for the first few years of their life, specifically because humans focus their energy on expanding their knowledge and acquiring information which leads to a more developed brain. The ability to walk for humans is secondary, as long as there has been a decisive push for knowledge to be attained and utilised in order to survive. Survival for humans is quite different from survival for animals. While animals rely on their instinct and physical abilities to survive, humans have evolved to rely on their large brains and knowledge stored therein.

Way back before computers could have even been perceived, Aristotle began philosophising greatly on the concept of intelligence, which he refers to as “logic”. In the *Organon*, Aristotle holds that logic is the consequence of one thing alone: deductions (which he calls *sullogismos*). Aristotle explains that deduction is speech in which certain things are supposed - this is the premise (*protasis*) of the argument and from these premises, conclusions can be drawn. The same concept was also reiterated by Professor Skottke, who in his paper describes general intelligence as the ability of an individual to acquire and apply knowledge.¹⁴

Twenty-two centuries later, Alan Turing devised an experiment now known as the Turing Test. In 1950, Alan Turing planned to explore the possibility of whether a machine could be able to think, however the concept of a machine being able to think like a human is a useless enterprise and one should look at whether a machine is able to arrive at the same conclusions as those arrived by human. He named this process “The Imitation Game”, which involves two human participants and a machine with a human interrogator in a separate room from the other human and the machine. The object of the game is for the interrogator to determine whether the responses to questions asked are coming from the human respondent or from the machine. The machine’s aim is to attempt to confuse the interrogator into thinking and believing it is human, whereas the human respondent attempts to assist the interrogator in identifying the machine from the human.

The purpose of this test is not to determine whether a machine is able to fool a human interrogator into believing it is human, but rather whether that machine can imitate a human. This does not necessarily result in an “intelligence test” as certain human behaviour may be deemed to be unintelligent, such as typing errors or the impulse to lie. A machine that does not perform these “unintelligent” actions would most likely fail the test, as responses would be too perfect and too clinical. On the other hand, the aim of that machine is to fool the interrogator into believing it is human, so it cannot appear too intelligent either, and needs to avoid actions such as solving long mathematical equations within a very short period of time.
John Searle who developed an alternative to the Turing Test known as the Chinese Room\textsuperscript{15} demonstrates that although the Turing Test is a good operational definition of the term “intelligence”, it does not indicate that the machine has consciousness or intentionality. It merely imitates the behaviour of a human and simulates human thinking.

The Chinese Room\textsuperscript{16} is a thought experiment developed in order to determine whether a positive response to a set of commands can amount to intelligence. This experiment is as follows:

A native English speaker, X, who has no knowledge of Chinese, is locked in a room full of boxes containing Chinese symbols - a database - together with a manual of instructions on how to use the symbols - a programme. A number of persons who are outside the room send X a series of notes containing Chinese letters - these notes are questions which X needs to answer using the database and the instruction manual available to him. By following these instructions, X is able to properly match the inputted Chinese questions and determine the pre-established answer to these questions.

As such X has demonstrated the fact that he can answer questions posed to him in Chinese and reply in the same language, despite the fact that he does not know a word of Chinese. Thus the fact that he is able to follow instructions (as a computer programme does) and correctly deliver an output from inputs

\textsuperscript{15} Searle J, 'The Chinese room revisited' [1982] 5(2) Behavioral and Brain Sciences 345 - 348
submitted, does not necessarily mean that X is conscious or knowledgeable of
what in fact he is actually saying. Critics have responded to this by pointing out
that human beings themselves respond to questions in a similar manner, but
use natural language as the set of “code books” used to answer questions.

This rationale was also expressed in 2001: A Space Odyssey, where the all-
controlling supercomputer known as HAL 9000, when asked whether it has
genuine emotions, replied that it appeared to have emotions. The response
from the film’s main character Dr. David Bowman was “[...] he acts like he has
genuine emotions. Of course he is programmed that way to make it easier for
us to talk to him.”¹⁷ Although here the main topic of controversy was emotions,
the same concept can be applied to intelligence.

More recent AI researchers have described the Turing Test as a mere
“distraction” to the real development of artificial intelligence. Most expert
systems nowadays focus solely on the automation of specific goals and tasks
such as automated scheduling and object recognition. Testing whether such
expert systems are “intelligent” in their field is simply done by giving them a task
and awaiting its accomplishment. Moreover, the entire point of developing
artificial intelligence is in fact to use intelligence which is inhuman: solving
mathematical problems in the blink of an eye, or scheduling incredibly complex
flight cabin crew rosters according to IATA standards and regulations.

¹⁷ Webster P., Love and Death in Kubrick: A Critical Study of the Films from Lolita through Eyes Wide Shut
(1st edn, McFarland 2010) 54
1.3.2 Definition of Artificial Intelligence

Artificial intelligence (AI) is the system used by machines to act in what we, as humans, believe is an intelligent manner. In order for a machine to be considered intelligent, not only must it fulfil the task it was programmed for, but it must also take into consideration its surroundings and environment it is in, which may not have been foreseen by the programmers.

These days, when developing systems which exhibit AI, programmers use methods inspired by nature. Algorithms known as neural networks seek to imitate the functions of the human brain through networks of decision making neurons which all make a yes/no decision based on training data (often data created by human experts).

Evolutionary algorithms on the other hand seek to mimic biological evolution. These algorithms “evolve” thousands of slightly different solutions and have them try the task. At the end of each “generation” the solutions which perform the best are kept, while the others are killed off. The best performing solutions “breed”; that is, bits of them are mixed with other well performing solutions to create the next generation of offspring. This process is continued until the programmer is satisfied with the performance of his evolved software.  

These algorithms have been used in applications ranging from image recognition to self-driving vehicles, interpreting human brain signals to designing parts for the International Space Station.

---

This definition was put to the test with the launch of IBM’s supercomputer called Watson\(^{19}\) which was programmed to answer questions posed in everyday language. In order to determine whether Watson was capable of exhibiting intelligence by understanding hidden meanings within questions, Watson’s mettle was tried on the American quiz show Jeopardy!. Jeopardy! is infamous for its exceedingly tricky questions, which involve puns and wordplay in order to confuse its participants. Before participating in this quiz programme, Watson was loaded with all the information the programmers thought would be helpful in order to win the game: encyclopaedias, web pages, literary texts and academic papers amongst others. Despite the fact that the inputs given were specifically created in order to confuse the contestants, Watson managed to beat the two reigning Jeopardy! champions. This milestone was not meant to prove that Watson was better at answering trivia questions, or faster - the main aim was to prove that a computer system may be able to use different learning techniques in order to determine the correct answer after evaluating the circumstances at that point in time.\(^{20}\)

1.4 The Interrelation between Robots, Expert Systems and Artificial Intelligence

It is incredibly difficult for a modern machine to fall solely within one category of robotics, expert systems and artificial intelligence. Technology is developed by overlapping the various fields of study, therefore most automated technologies contain elements of more than one of these fields.

---


1.4.1 Expert Systems and Robotics

Robotic systems such as those created to juggle coloured balls highlight the join between expert systems and robotics. They work by combining a set of expert knowledge, such as the needed position and velocity to throw a ball in the air with a level of consistency unachievable by humans, and the robotic components to actually act on their surroundings. They in most cases however do not need to incorporate artificial intelligence, as their level of consistency in a controlled environment precludes the need for great adaptation, and as such a few simple expert algorithms are sufficient to allow them to carry out their task.

1.4.2 Expert Systems and Artificial Intelligence

One of the best-known cross-breeds between ES and AI is the Airbus 320, which was the first computerised aircraft that can land, take-off and cruise without the intervention of a pilot. This computerised system was previously only used in military aircraft. It is a highly elaborate and sensitive ES as it has the capability to block out any manoeuvres by the pilot if it deems these to be dangerous. Most accidents involving aircraft have almost entirely been attributed to human error, be it through the lack of adequate manoeuvres at the required time or lack of oversight and inspection of the aircraft.

The system on the Airbus A320 attempts to limit these possibilities. However, this system may be switched off or not incorporated into the plane from the start. For instance, had this system been operative on the Germanwings aircraft in 2014, the
tragedy that struck that plane may have been prevented, as the system would have shut the pilot out, thus preventing him from changing course.23

1.4.3 Artificial Intelligence and Robotics

A new breakthrough in technology that will likewise test the applicability of current legislation is the creation of robots with biological components which are necessary for their functions. Here we are not speaking of the science fiction classical character of human-machine entities referred to as cyborgs. Engineers have already developed a robot which uses biological material to control robotic mechanisms as opposed to conventional programming – the rat-brain robot.

The rat-brain robot uses rat neuron cells to determine its preferred trajectory. Although it moves in a seemingly chaotic manner, the robot is actually using biological rat neurons to learn on how to adapt to its environment. The creator of this robot, Mr Steve Potter explains that “[the] robot then manifests this neuronal activity with physical motion, each of its movements a direct result of neurons talking to neurons. And the robot also sends information back to the cells. Equipped with light sensors, the robot receives input about its location in the playpen from infrared signals lining the borders.”24

This new technology puts pressure on current legislation that distinguishes between the liability for damages caused by animals and damages caused by robots, which up until this moment has been dealt with by using regulations.

relating to product liability. The scenario concerning the rat-brain robot involves decisions being made by a robot using the neurons of an animal. In this case, would product liability still apply, given that the product makes its own decisions with no intervention from the manufacturer or user, much like an animal does? This possibility will be discussed further in Chapter 2.

1.4.4 The Epitome of the Triad: Autonomous Vehicles

In 2009, Google unleashed its Google Autonomous Vehicle (AV) on the streets of San Francisco. Since then, these cars have travelled over 1.5 million miles on the streets of California and Texas. Over the last 6 years, Nevada, Florida, California, Michigan, North Dakota, Tennessee and Washington D.C. have all passed legislations regulating and licensing self-driving cars. Since 2010, the 57 Google Automated Vehicles (AV) currently self-driving on public streets have been involved in 20 accidents while in autonomous mode – only one of which was the fault of the Google AV, as most of them included the AV being rear-ended or hit from the side by an oncoming car.

Indeed, the least reliable part of a car is the human in the driver’s seat. Ever since cars were invented in 1886, manufacturers have been attempting to ensure that the experience of driving a car is made safer by working around that least reliable but indispensable factor. If one were to look at the difference between Karl Benz’s first drive and our daily morning commute one can easily spot the differences that have been made over the decades - cars now have

---


locking seatbelts, multiple airbags, crumple zones, power steering, automatic transmissions and automatic braking systems. Despite the fact that we have attempted to make cars as safe as possible, the real issue with driving cars has never changed - human error. Over the last few years, we have attempted to work around the driver by creating “assisted driving systems” which assist the driver in certain circumstances. Scenarios where one is driving with very low visibility, for instance, have been partially resolved through the use of a Head-Up Display system\(^\text{27}\) which uses GPS and Radar systems to assist the driver by displaying certain objects on the car’s windshield which would not be visible to the driver in these cases of excessive fog, for instance.

Despite the fact that these Assisted Driving Systems are incredibly useful, given human nature, people tend to rely too much on them and often don’t provide the attention required whilst driving. Therefore, technology is being developed to completely do away with the human error part of driving by removing the driver from the equation. Self-driving cars are being developed in order to make driving as safe as possible by using machine accuracy. A machine is not distracted, it does not get tired, thirsty or hungry while driving, and cannot drive under the influence of alcohol or illegal substances. The self-driving car has been programmed to get from Point A to Point B as safely as possible. This was also recognised by the European Commission ten years ago when it published its i2010 Intelligent Car Initiative which aimed at “removing obstacles to market deployment, stimulating product demand and building consensus among key players. Moreover, pollution, road safety and congestion are problems common

\(^{27}\)Lin R. et al., Reliability Analysis of Driver Behaviour Under Effect of Head-up Display System: A Probabilistic Risk Assessment in Traffic Operation. in Wen Z and Li T (eds), Practical Applications of Intelligent Systems (Springer Berlin Heidelberg 2014)
to all the Member States. Action at European level is therefore all the more appropriate.”

Similarly to human drivers, certain circumstances will call for snap judgments to be made by AVs. For instance, if a deer jumps in front of the moving car or a tree branch falls in the car’s path, it needs to be able to quickly react to the changing circumstances. In order to combat this, Google has taken a number of precautions. In October 2015, the Google AV system was updated to recognise children in Halloween costumes enabling them to recognise children in all shapes and sizes. The Google AV has been programmed to drive more cautiously around children, as children are known to act unpredictably and are more easily obscured by parked cars.

Nevada was the first to enact a law regulating these AVs, whilst also providing a definition of what is meant by an “autonomous vehicle” (AV). NV AB511 which enacted the law in question defined an AV as: “a motor vehicle that uses artificial intelligence, sensors and global positioning system coordinates to drive itself without the active intervention of a human operator.” The Bill also defines artificial intelligence as “the use of computers and related equipment to enable a machine to duplicate or mimic the behaviour of human beings.” Whilst the definition of AV is simplified, it does essentially describe what an AV is.

31 Ibid Section 3(a)
However, as discussed earlier, the definition adopted for “artificial intelligence” leaves much to be desired. If a machine is being deployed to “duplicate or mimic” human behaviour, there would be no need for AI to be installed in a motorised vehicle. The entire point of having an AV is to reduce the amount of risk of injury from driving a motorised vehicle - the greatest risk of driving is in fact the human driver.

However, in spite of all the precautions that can be taken in order to ensure that an AV is as safe as possible, there are still factors beyond the designers’ or the programmers’ control which could eventually lead to the car causing injury, and act in ways which were not foreseen by its creator. In July of 2016, Tesla Motors issued a crash incident report which accounted for the first ever fatality involving an autonomous or semi-autonomous vehicle. In this incident, Joshua Brown’s Tesla Model S whilst travelling in autonomous mode failed to register a white truck merging into its lane due to light reflecting off of the truck and crashed into it resulting in the Mr Brown’s death.\(^{32}\) At the time of writing this thesis, the family of the victim had not yet opened legal proceedings against Tesla Motors, although injury lawyers in the US have held that there may be legal grounds for suing under product liability regimes as Mr Brown may have been led to believe that the system was more capable than it actually was, despite the fact that Tesla Motors issues warnings when the semi-autonomous mode is activated.\(^{33}\)

---


The products and services established above may cause liability which can be based in either delict or in tort. For example, if the damage is caused to a user through a malfunction of the system due to an engineering error at production stage, the engineer's liability will depend upon the contract that had been established between the user and producer. If no such contract exists between parties, then liability will be determined on the grounds of tort law. As can be seen there are two main parties involved in this scenario: the producer and the users. However, there is a third category which is essential to be considered: the third party who is neither user nor producer.
Chapter 2: Product Liability

Product Liability legislation is aimed at providing a balance between the role of the seller and the consumer of a product. Oftentimes, the consumer is at a disadvantage when compared to the seller, given that the consumer has to believe that what the seller is telling him about the purchase of a product is in fact true, with no possibility of verifying these facts on the spot. It is very unlikely for the consumer to have conducted his own research prior to purchasing a product of low value; conversely, it is more probable that when the value of the product being purchased exceeds a certain amount, that consumer would have spent ample time conducting research on the product itself, the products offered by competitors, pricing, benefits, safety and possible defects. Moreover, by making manufacturers strictly liable for damages caused by their products, one would guarantee that the technology continues to be developed, improved and made safer for the consumer.

Product liability is based on the idea that strict liability should be imposed on the producer, manufacturer or seller. Prior to the introduction of this strict liability placed on producers, manufacturers and sellers, any defect in the product which resulted in injury would have to be proven by the consumer to have existed at the time of the purchase or as a latent defect. The rationale behind making producers strictly liable for damages caused by their products is because the producer is in a financial position which is more stable than that of the consumer, and thus, justice is more likely to be seen to be done when the consumer is not made to suffer the harm caused by a product sold to him. The
producer moreover, is also likely to be covered by an insurance policy that would have been set up specifically to cover such occurrences.

For instance, in October 2015 Volvo proclaimed that it will pay for damages caused by its AVs.\textsuperscript{34} This declaration prompted debate within the legal and engineering spheres on the updating of legal frameworks to address such issues. Within the context of this debate, John Villasenor, professor of electrical engineering and public policy at the University of California, held that the current laws concerning product liability are already equipped to tackle these issues in the sense that, \textit{“If an autonomous car causes an accident, then the manufacturer was already going to be squarely in the liability chain.”}\textsuperscript{35}

Although scholarly institutions such as the University of Washington’s Technology Law and Policy Clinic\textsuperscript{36} agreed with the conclusions of Prof. Villasenor, applying the rules of product liability may not necessarily be the best option for the apportioning of liability for damages caused by AI such as AVs, since certain types of AI develop their programming through evolutionary algorithms, independently of the will of the producer, and thus the causality link between the action undertaken by the AI and programming of the programmers may be very tenuous.

\textsuperscript{34} Korosec K., \textquoteleft Volvo CEO: We will accept all liability when our cars are in autonomous mode\textquoteright{} (Fortune, 7 October 2015) <http://fortune.com/2015/10/07/volvo-liability-self-driving-cars/> accessed 2 May 2016
In Malta, the notion of strict product liability was introduced into the system with the promulgation of the Consumer Affairs Act (CAA) in 2000, which transposed the EU Directive 85/374/EEC, more commonly known as the Product Liability Directive (PLD) which had come into force in 1985. Prior to the transposition of the Directive into Maltese law 15 years later, the law that was applied to govern product liability was found in the fault-based liability provisions with tort law and contract law in the Maltese CC.

2.1 Product Liability based on the Maltese Civil Code

Prior to the introduction of Product Liability into our system, the Maltese CC provided for two separate sets of protections to the consumer: protection afforded under contract law provisions and protections provided through the application of tort law, which shall be discussed in Chapters 3 and 4.

Article 1125 of the CC outlines the general principle that governs all contractual obligations, that is, that failure by a contracting party to discharge any contracted obligation will lead to liability for damages. In the case of the purchase of a product, the most common scenario is that the seller and the buyer enter into a contract of sale which transfers the ownership, the periculum rei and the commodum rei to the buyer. The transfer of the thing sold also indicates the beginning of a set of rights and obligations vesting in the seller and the buyer.

---

37 The purchaser runs the risk of the loss of a thing sold, though not delivered.  
38 The purchaser is entitled to all the fruits and benefits of the thing purchased.
Once a contract of sale is concluded, as stipulated by Article 1378, the seller becomes bound to deliver the thing sold to its new owner, and he is likewise bound to provide a warranty of peaceful possession and a warranty for latent defects. The warranty against peaceful possession ensures that the buyer is not molested in his possession of the thing sold by a third party who claims to have certain rights over the thing sold. This warranty, although essential when one analyses contracts of sale, does not fall within the scope of this thesis. The warranty against latent defects however is a topic which deserves to be tackled.

2.1.1 Warranty against Latent Defects

Professor Caruana Galizia holds that a warranty against latent defects arises “when the thing bought and delivered is found to be affected by such vices or defects which render it unsuitable for the use which it is destined or which reduce its value”\(^{39}\), reflecting what is found in Article 1424\(^{40}\). He goes on to say that for the warranty to arise there must be three conditions which must be fulfilled: (1) the defect must be of a serious nature which renders the thing sold unsuitable for the purpose for which it was purchased or else diminishes its value; (2) the defect must be latent and non-apparent and; (3) the defect must exist at the time of the sale. \(^{41}\)

This warranty only arises if the defect was latent and non-apparent; if the defect was obvious and could have been seen by the purchaser prior to the purchase, the purchaser would have either negotiated a better price whilst taking into account the defect or he would not have gone through with the purchase due to

---

\(^{39}\) Caruana Galizia V., *Notes on the Contract of Sale*, pg. 565  
\(^{40}\) *Vide Appendix A*  
\(^{41}\) Caruana Galizia (n 39) 566
that defect. If the defects were apparent and the purchaser did not see them, the seller is still not to be held liable as the purchaser could have discovered the defects for himself and it was due to his negligence that such a discovery was not made.

Moreover, the defect must exist at the time of the conclusion of the contract of sale. In the case of learning systems which develop their decision-making components through inputs from their environment, it would be almost impossible to determine at what stage the “defect”, if it can be considered to be a defect, occurred.42

If the purchaser discovers that the thing purchased is defective he may institute two actions against the seller: the actio redhibitoria or the actio aestimataria43. The actio redhibitoria seeks to place the purchaser in the same position he was in prior to the purchase, i.e. the thing purchased is returned to the seller and the amount of money paid is given back to the buyer. If the buyer elects to take the route of the actio aestimataria, he will retain ownership of the thing purchased; however the seller would be bound to pay a price equivalent to the defect. If the seller was aware that the thing purchased was defective, the purchaser may, besides from the actio redhibitoria or the actio aestimataria, also institute an action for the payment of damages under tort provisions, as the seller had not acted in good faith when selling an item which he knew was defective.44

42 This matter will be discussed later on in this Chapter.
43 Civil Code (n 2) Article 1427
44 Ibid, Article 1429
With regards to the application of tort provisions to product liability, as will be expounded upon in Chapters 3 and 4, every person is liable for damages caused through his own fault. The difference that sets apart product liability in contract from product liability in tort is that under contract you have the possibility of instituting the *actio redhibitoria* or the *actio aestimatoria* together with an action for damages, whereas if tort law is applied in cases of product liability the only remedy available is the institution of an action for damages, thus greatly diminishing the compensation that a buyer may be given.

### 2.2 Product Liability under the Consumer Affairs Act and the Product Liability Directive

As was illustrated above, prior to the introduction of strict product liability, the buyer had to go through a somewhat lengthy and cumbersome procedure in order to be afforded a minor remedy. The consumer first needed to prove that the seller was at fault when selling an item which was defective, as well as proving that the item was defective at the time of the purchase. If the seller was not aware that a defect existed, the buyer would only be given the opportunity to revert to a *status quo ante* with no possibility of recuperating damages.

The inclusion of strict product liability in our system made it much easier for a consumer to be able to receive compensation if the product purchased causes injury. The Consumer Affairs Act (CAA) and the Product Liability Directive (PLD) provide a higher level of protection to the consumer than that afforded to him by the CC.
Article 73 of the CAA holds that traders are obliged to deliver goods which are in conformity with the description and according to the specifications listed in the contract of sale.\(^{45}\) Moreover, Article 73(3) goes on to say that not only must there be conformity with the contractual description, but the product must also conform to any public allegations or advertisements made by the trader himself. This issue was discussed in *Natasha Grech v. G. I. Trading Ltd*\(^{46}\), where the plaintiff had bought a set of stainless steel pots which carried a warranty of 25 years “on stainless steel only”. After a certain period of usage, the plaintiff noticed that the pots were beginning to rust and filed a complaint to the undertaking. The Company held that the rust was due to “over-cooking” and this was not covered under the warranty. The plaintiff filed a case claiming that the pots bought by her were not of the promised quality and breached Article 73(1) of the CAA. The Court agreed with the plaintiff and held that the condition in Article 73(1) meant that the goods delivered must be in conformity with the description and specifications, and in this case they were not.

2.2.1 Definition of the term “defective product”

Article 56 of the CAA defines the term “product” as “any movable and includes: (a) any movable incorporated into another product or into an immovable, (b) electricity, (c) gas, and (d) primary agricultural products;”\(^{47}\) The PLD goes on to state that agricultural products include products derived from the soil, farming, fisheries and game.\(^{48}\)

\(^{45}\) Consumer Affairs Act, Chapter 378 of the Laws of Malta, Article 73

\(^{46}\) Grech Natasha Vs GL Trading Ltd., Court of Appeal, 18 June 2010

\(^{47}\) CAA (n 45) Article 56

\(^{48}\) Liability for defective products [1985] OJ 2 210/29 Article 2
A product is defective if it fails to provide the safety a person is entitled to expect, taking into account the presentation, how it was marketed and any directions and warnings, its reasonable use, and the time it was put in circulation.\footnote{PLD (n 48), Article 60(1)} Furthermore, if a product does not provide for the safety usually provided by models of the same type, it is deemed defective.\footnote{Ibid Article 60(3)} However, a product is not considered defective if a better product is subsequently put in circulation.\footnote{Ibid Article 60(2)}

Consumers can seek compensation when a defective product causes death or personal injury, including any disease and any mental or physical impairment of a person or loss.\footnote{CAA (n 45) Article 56} Consumers can likewise seek compensation for damage or destruction of any item of property, other than the defective product itself, having a value of at least €500 if the product was intended for private use and consumption and it had been employed for such.\footnote{PLD (n 48), Article 61}

### 2.2.2 Who is to be held liable under Product Liability?

Both the CAA\footnote{Ibid Article 57} and the PLD\footnote{CAA (n 45) Article 1} hold that it is the producer of the defective product who is to be held liable for any injury caused by the defective product. However, the term producer is further elaborated to include the manufacturer of a finished product; the manufacturer of a constituent part; the producer of any raw materials; the producer of any primary agricultural products; or any person presenting himself as the producer by putting his name or trade mark on the product.
product; or the importer in cases where the product is manufactured or produced outside a Member State.\textsuperscript{56}

The supplier will be held liable instead of the producer when the producer cannot be identified, and the supplier fails to meet the request of the victim in providing the identity of the producer or the person who supplied the supplier with the products. This is also the case when the importer cannot be identified, even if the name of the producer is indicated and the supplier fails to meet the request of the victim in providing the identity of the importer or the person who supplied the supplier with the product.\textsuperscript{57}

Article 16 of the PLD permits Member States to choose to place a limit of not less than €70 million on the total liability of a producer for damage resulting from a death or personal injury. However, the Maltese legislator opted not to set a ceiling for the producer’s total liability for damages resulting from death or personal injury. The CAA however provides for compensation for moral (nonmaterial) damages up to a maximum of €750\textsuperscript{58}. Generally, under the Maltese legal system no moral damages may be awarded unless expressly envisaged by law.

\textbf{2.2.3 The Development Risk Defence}

The strict liability regime which is implemented when one discusses product liability is diluted by the so called “development risk defence” or the “state of the art exception”, enshrined in Article 7 of the Directive which holds that the

---

\textsuperscript{56} PLD (n 48), Article 56
\textsuperscript{57} Ibid. Article 59
\textsuperscript{58} Ibid. Article 14
producer is not held liable if the scientific and technical knowledge necessary to determine that a defect is present did not exist at the time of circulation.\textsuperscript{59} As such, given that this thesis deals with cutting edge technology, it is likely that this defence would be of great benefit to developers and producers when products such as the AVs are claimed to be defective.

For the state of the art exception to strict product liability to be upheld two types of evidence must be forthcoming: conformity with industry-wide standards and the product cannot be made safer given the present state of scientific knowledge.\textsuperscript{60} The producer has to prove that the defect was unknown and unknowable at the time of circulation, in which case the allocation of risk is shifted back on the shoulders of the consumer. The difficulty arises with the definition of the term “unknowable”. Does this defence still exist if the producer suspected that such a defect existed? What if the technical and scientific expertise, although unknown to the producer, had been published in an obscure, foreign scientific journal? This matter was discussed in Case C-300/95 Commission of the European Communities v. the United Kingdom, where the Court held that “\textit{Whilst the producer has to prove that the objective state of scientific and technical knowledge, including the most advanced level of such knowledge, without any restriction as to the industrial sector concerned, was not such as to enable the existence of the defect to be discovered, in order for the relevant knowledge to be successfully pleaded as against the producer, that}"

\textsuperscript{59} PLD (n 48), Article 7(e)
knowledge must have been accessible at the time when the product in question was put into circulation.”

A rationale for this producer-friendly “development risk defence” lies in the perception that in the absence of such a defence, producers would have had greatly diminished the incentive to invest in new products, not least because of problems in securing insurance cover under a system of pure strict liability.

In June 2004, the Commission published a report on the economic impact of the development risk defence, conceding that while this defence is rarely used, said use is only one measure of its impact. It concluded that elimination of the defence might plausibly deter innovation by producers, but concedes that it is very difficult to collect sound empirical data on the effect of the defence. It also takes the view that insurance costs would rise were the defence to be removed, and that some products would be uninsurable. Therefore, it finds the defence to have helped in stabilizing the cost of insurance in the EU.

2.3 Is Product Liability the best option for apportioning liability in damages caused by Artificial Intelligence?

If an AI causes injury due to a malfunction, error in programming or defect in its construction, it seems almost natural that the manufacturer, producer or programmer is held liable under the strict liability rules imposed by Product

---

63 Ibid.
64 Ibid. p.35
65 Ibid. p. 133
Liability legislation. However, the answer is not so simple when the injury that is caused by the AI is not attributable to any defect in manufacturing or malfunction of the system, but rather to an action taken by the AI through the proper functioning of its programming.

For instance, take the example of Google’s AV operating in autonomous mode, driving down a busy suburban road, when a child crosses the street right in the path of the oncoming vehicle. In the few seconds it has been given, the Google AV decides that the best and only course of action in order to avoid hitting the child is to swerve to the left into a number of parked vehicles, causing damage to said vehicles. One cannot say that the system operating the AV malfunctioned or was defective, in the sense that it correctly calculated that it would be better to cause damage to a number of cars rather than run over a child. In this case, strict product liability should surely not be applied against the manufacturers who had created a machine that works according to the specifications that had been given to it.

Moreover, if strict product liability were to be applied in the above scenario, developers would think twice about continuing to develop new technology, since if anything goes wrong with that technology it would be attributable to them, despite the fact that their product was working and not defective. This rationale, however, has been temporarily suspended by some manufacturers of AVs, such as the aforementioned Volvo, in order not to hinder technological advancements, inclusion in the automotive market and testing of prototypes.
In a Green Paper published by the non-profit organisation euRobotics, the authors of the paper conceded the fact that since robots are programmed to interact with the environment they are placed in, they may behave in a manner which is unpredictable to the programmer or producer and of course, in a manner that is beyond their control. Bertolini holds that proof of the element of control, defined as supervision and direct determination, is vital in order to attribute liability in terms of the regulations governing product liability. This would appear to pose problems in applying product liability to AI.

2.4 Conclusion

In this chapter, it was determined that when purchasing an AI the purchaser enters into a contractual relationship with the producer of the AI, establishing that the “product” will function in a manner that is deemed to be safe to use and in the manner prescribed by the contract itself. The regimes adopted in product liability may be effective in determining liability on the part of the manufacturer and producer of the AI if there is a certain element of predictability. The rules of product liability would apply to those cases where damage is caused to the consumer who purchased the product, but who does not enjoy privity of contract with producers/manufacturer, if this damage resulted from a defect in the composition of the AI.

However, the current rules of product liability are ineffective when it comes to determining who is responsible for damages caused to a person other than the purchaser himself, and moreover to damage caused by an AI with learning capabilities that is completely autonomous and unpredictable once it has been released on the market. In essence, an AI machine cannot be considered as a mere product, given that it acts independently from the wills of its producers and owners. The author thus believes that in such scenarios other legal avenues need to be explored in order to determine who can be held liable for injuries caused by AI when they are acting autonomously but not defectively.
Chapter 3: Elements of Tortious Liability

Professor Caruana Galizia defines torts and quasi-torts as “an unlawful and unjust act, whether positive or negative, whether due to dolus or culpa which causes damage to the person or to the property of another individual”\(^\text{68}\). Maltese tort law can be found in Articles 1030 to 1033 of the CC which are based on the principle of \textit{neminem laedere}, that is, a general duty of care. These articles are as follows:

1030. Any person who makes use, within the proper limits, of a right competent to him, shall not be liable for any damage which may result therefrom.

1031. Every person, however, shall be liable for the damage which occurs through his fault.

1032. (1) A person shall be deemed to be in fault if, in his own acts, he does not use the prudence, diligence, and attention of a \textit{bonus paterfamilias}.

(2) No person shall, in the absence of an express provision of the law, be liable for any damage caused by want of prudence, diligence, or attention in a higher degree.

1033. Any person who, with or without intent to injure, voluntarily or through negligence, imprudence, or want of attention, is guilty of any act or omission constituting a

breach of the duty imposed by law, shall be liable for any damage resulting therefrom\textsuperscript{69}

These articles cover a range of situations where there is an intentional element (culpa or dolus) and a conduct (action or omission) which cause harm. Conduct may be considered to be negligent when the person does something carelessly or when the person omits from doing something.

Article 1031 of the CC creates the general liability for damage caused through “fault” which is defined in Article 1032(1) as the tortfeasor’s failure to use “prudence, diligence and attention of a bonus paterfamilias”. Although this article seems to only include culpable actions of the tortfeasor in its ambit, Dr Zammit is of the opinion that - since this is almost a precise textual counterpart of the French general clause on liability in tort - this also includes dolus and omissions.\textsuperscript{70} The Courts, when determining whether there is fault or not, use an objective test in the sense that they attempt to determine whether the defendant acted negligently or intentionally by comparing his/her conduct to that of a bonus paterfamilias. Article 1033 expressly caters both for acts and for omissions and clarifies that its scope covers both voluntary and negligent actions and omissions. What Article 1033 always requires is a “breach of a duty imposed by law” in order to impose liability.

Azarnia holds that fault under the French legal system can be classified into three different categories: (1) an unlawful act, (2) a breach of duty and (3) an

\textsuperscript{69} Civil Code (n 2), Article 1030 - 1033
\textsuperscript{70} Zammit D.E., Expert Report in \textit{Group Seven Ltd et v Edward Heerma et} [2013] EWHC(Ch) Claim No. HC12C00507, (Norris)
error in conduct. When applied to Maltese legislation, categories (1) and (2) would fall under the category of a breach of a duty imposed by statute, as defined in Article 1033. On the other hand, (3) is embodied in Article 1031 and 1032 of the CC, which compares the acts of the defendant with the acts of a bonus paterfamilias. Indeed, most judgments have determined that for there to be fault, proof of the following is required: imputability\(^{71}\), dolus or culpa, a causal link, actual damage inflicted upon the plaintiff and proof that the damage caused was unjust.

In the case of **George Thomas Davison vs. Joseph Azzopardi ne.**\(^{72}\), the Court held that an analysis of the articles of the law establishing tort results in the emergence of three main elements which must concur in order for a person to be held liable in tort:

1. The act or omission must be unjust i.e. the conduct of the tortfeasor must be incorrect, in that it must violate some rules of conduct if not also breach statutory provisions.
2. This unjust act or omission must be imputable to a person who is capable of committing a tort
3. There must be a causal link between the person’s act or omission and damages suffered

According to Professor Caruana Galizia, there are four necessary conditions for an action to be considered a tortious one; these conditions have also been

---

\(^{71}\) Discussed in Chapter 4
\(^{72}\) Koll. Volum XLVI.B (1962), Pt. 1, p. 477
affirmed in jurisprudence. Professor Caruana Galizia added a fourth condition stating that “the act must be committed through dolus or culpa of the defendant”. 73

3.1 Dolus or culpa

Under civil law, as determined by the case Falzon vs. Felice74, dolus is considered to be the knowledge that one’s actions or omissions are contrary to what is stipulated by law. A mere awareness that the act may be unlawful and that such action may cause harm to others would be sufficient to determine that there is dolo on the part of the tortfeasor. The standard of culpa is that the damage his conduct would cause to the victim should and could have been foreseen by the tortfeasor, as was held in Elmo Insurance Services Et Vs Micallef Joseph PC 537 Et75. In Annunziato D’Amato et vs. Joseph Camilleri et, the court held that culpa may also exist if the tortfeasor is merely aware that it is probable that damage will be caused to a third party. Since the defendants were engaging in a risky activity, the onus of proving that they were not liable rested upon them. Indeed, the Court in this case held the defendant liable in culpa on a number of factors, including the fact that they were engaging in a risky activity and the fact that they were aware, as were other seamen who testified in the case, that due to the weather conditions the flammable liquid that was present on the surface of the sea had gathered over time, and was therefore

73 Caruana Galizia (n 68) p. 60
74 Koll. Volum XXIX Pt. 2, p.117.
75 Elmo Insurance Services Et Vs Micallef Joseph Pc 537 Et, Court of Appeal, 5 October 2001
dangerous. In such cases, the Court refers to the wording of Article 1033 which holds that “with or without intent to injure” “voluntarily” acts or fails to act.

3.2 Unjust Act

The court interprets the term “unjust” in a wide manner and does not rely solely on the breach of a statutorily imposed duty but goes beyond; so much so that it includes activities which are contrary to good conduct, or if the tortfeasor abused of a right which was legally bestowed upon him, as indicated in Article 1030.

In interpreting and applying Article 1033, our Courts have held that proof that there was a breach of a statutorily imposed duty under this article may replace the need to prove culpa or dolus on the part of the tortfeasor. In Brincat v. Salina Estates, the Court held that since the defendants were conducting activity which was contrary to an established statute, the plaintiffs did not need to prove that there was fault on the part of the defendant. Instead, the onus of proof shifted on the defendant himself to prove that he had not acted negligently.

Moreover, some judgments seem to imply that a mere omission may also fall within the ambit of Article 1033. In the case Micallef v. Bondin, the Court held that liability for an omission under Article 1033 only arises when there is a

76 Koll. Volum XLIL A (1958), Pt. 1, S.1, p. 82 “Huma kien jafu ukoll, kif kienu jafu sajjieda li xehtu, illi dak inhar, peress li kien ilu xi hmistax il-gurnata rif ifsfl, iz-zejt kien ilu jingabar f’wicc il-bahar, u kwindi l-perikolu kien akkar.”

77 Brincat Saviour et. vs. Salina Estates Limited, Court of Appeal, 25 February 2004

78 Koll. Volum LXXXI (1997), Pt. 2, S. 1, p. 581
breach of a legal duty imposed upon the party by statute. In this case, Bondin was not bound by any statutory means to mention that the travel agent he recommended was insolvent. This however was a rather exceptional case.

In the case *Elmo Insurance Services Vs Micallef*⁷⁹, the Court was confronted with a different situation. In this case, the Commissioner of Police was held responsible for negligent omission in the course of his duties as per Articles 1031 and 1032 when a fire engine, which fell under his care, malfunctioned and caused damage to the plaintiff’s vehicle, although no breach of an express statutory duty to maintain the fire engine could be identified. This was not a case of ‘culpa in eligendo’ or the application of the English Common Law doctrine of the master’s vicarious liability as was suggested by appellant Micallef⁸⁰. This involved the grounding of the liability of the Commissioner, on the basis that he had not used the diligence of a bonus paterfamilias in carrying out his duty of providing safe and road worthy vehicles to his employees. The Court held that the liability of the Commissioner arose even though he did not have a specific statutorily imposed duty to ensure that vehicles in the Fire Department were well-maintained. This involved the direct, not the vicarious liability of the Commissioner.

On the other hand, it is possible to hold that under Article 1033 it might be plausible for an AI to be held liable without the need to prove culpa or dolus, should the Court hold that tortious responsibility is presumed to exist because of the fact that the infliction of damage by the AI violated a duty imposed by law. AI

---

⁷⁹ (n 75)
⁸⁰ *Ibid* p. 20
is programmed to carry out certain functions and adapt to the environment around it. If, for instance, a Google AV deliberately swerves off the road into the plaintiff’s property in order to avoid crashing into an oncoming car, in this case it may perhaps be held that under Article 1033 the Google AV had violated the applicable legal norms expressed in the Highway Code\(^{81}\), and that consequently liability is presumed to vest in its owner. As such it seems likely that the Google AV would be held liable under Article 1033.

Nevertheless, one needs to take the circumstances of each case into account, as the owner may exculpate himself by showing that the AV had no other options which would have prevented damage from occurring. The defence of necessity refers to the instance where the defendant causes damage to a third party or to a third party’s property in order to eliminate an imminent threat to himself or to a third party. Although there is no specific provision in the CC which holds that necessity could be a defence from tortuous liability Caruana Scicluna\(^{82}\) held that when comparing the Maltese CC to the 1865 Italian CC one could reasonably base the defence of necessity on Article 1030 which eliminated liability from any damage that results when a person “makes use, within the proper, limits, of a right competent to him”. Moreover, *jus necessitates* may also fall under the contemplations of *force majeure* envisioned in Article 1029. The application of the defence of necessity if a rare occurrence in Maltese jurisprudence, in fact in *Pulizija v. Mizzi* the Court held that “[f]jil-liġi taghna ma’

---

81 The Highway Code, available at http://www.transport.gov.mt/admin/uploads/media-library/files/Highway%20Code%20EN.pdf_20130927083609.pdf pg. 35 which holds “It is your duty, whether as a motorist or as a pedestrian, to contribute to road safety. Independently of the rights and wrongs of the case, it is your duty to avoid an accident if it is within your power to do so.”

tirikonoxxi ebda difiża ġenerali, fis-sens ta’ skriminati ġenerali, ta’ “neċessita”\textsuperscript{83}

In Bezzina v. Grech the Court likewise held that “il-każ fortuwitu, il-forza maġġuri u l-istat ta’ neċessita ma jehilsux mir-responsabbilita’ tad-danni jekk ikunu preċeduti minn ħtija ta’ min ikkaġuna d-danni.”\textsuperscript{84}

One may also hold the programmer liable in situations where he was aware that as a result of the AV’s programming, a situation may arise which would result in proprietary damage caused to third parties. In such a case, that programmer would have a duty of care to adjust the programming in order to avoid such occurrence. However, if the narrow interpretation given in the aforementioned Micallef v. Bondin is adopted, it would be difficult to determine whether a statutorily imposed duty was breached.

### 3.3 Unskillfulness and Professional Negligence

In Maltese law, our model for professional negligence can be seen in the case Victor Savona pro et noe v. Dr. Peter Asphar\textsuperscript{85}, which concerned the conduct of a medical surgeon who failed to diagnose a case of gangrene, resulting in a boy losing his foot. The Court held that the fact that Dr. Asphar had acted in good faith did not exonerate him from responsibility, as such good faith merely distinguished culpa from dolus. Article 1038 of the CC holds that:

\textsuperscript{83} Pulizija v. Mizzi John, Court of Criminal Appeal (Inferior Jurisdiction), per Mr Justice Vincent De Gaetano, 14th November 2003
Translation: “Our law does not recognise any general defence of necessity”

\textsuperscript{84} Bezzina Caterina v. Grech Giorgio et, First Hall, Civil Court, 7th June, 1938
Translation: “Fortuitous cause, force majeur and the state of necessity do not remove the responsibility for damages if these are preceeded with the fault of the tortfeasor.”

\textsuperscript{85} Koll. Volum XXXVI.B (1952), Pt. 1, p.181
1038. Any person who without the necessary skill undertakes any work or service shall be liable for any damage which, through his unskilfulness, he may cause to others.86

Therefore, if a person performs tasks which require a certain skill set and the plaintiff is injured by the lack of this skill, then the defendant’s actions will be equated with a person who is skilled to carry out those tasks.

The CoA concluded that Asphar could not be held liable for unskillfulness, as for a professional error to fall within the bracket of being considered as “unskillful” the error must be gross in nature, demonstrating an inexcusable ignorance of professional conduct. The Court went on to hold that Asphar did not, however, act diligently and as a bonus paterfamilias as he did not keep the patient under constant observation. Had such observation been carried out, Asphar would have recognised that the foot was becoming gangrenous and the necessary action would have been taken. Finally, the Court indicated that culpa can exist either due to unskillfulness or due to a lack of prudence, diligence, and attention.

Dr. K. Camilleri Xuereb holds that culpa based on unskillfulness may be identified in two scenarios: (1) where a professional demonstrates “unpardonable ignorance” and makes gross mistakes in the exercise of his profession, or (2) where a person purports to be a member of a professional sphere whilst having no expertise in the field.87 In the same article Camilleri

86 Civil Code (n 2) Article 1038
87 Kevin Camilleri Xuereb, Negligence Defined, Negligence Refined – Part II. [2007] 17 Law & Practice Malta Chamber of Advocates, 8
Xuereb cites three features which must be present for negligence based on unskillfulness to occur:

1. The ignorance of the essential modus operandi in the performance of professional tasks;
2. The manifest or gross error in the performance of such tasks which other professionals would not have done in the same set of circumstances; and
3. The inability to put into practice and adhere to the requisite professional standards in the given situation.

With regards to unskillfulness and professional negligence, Article 1038 may be applied to expert systems such as MYCIN, an expert system developed in the 1970s that was programmed to carry out diagnoses on patients based on their symptoms and medical history and recommend the necessary treatment. In a study carried out by the Stanford Medical School, MYCIN performed better in diagnosing and applying the correct treatment to patients than infectious disease experts. Although this system had a 69% success rate, which was greater than that of the human experts, it was never operated in practice due to ethical and legal issues raised by practitioners on what would happen if the system misdiagnosed a person and administered the wrong treatment to a patient. At that point in time, the system was abandoned due to technological

---

limitations and we were never blessed with a legal opinion on the matter. However, if the system were to be functional nowadays the question of what will happen if it misdiagnoses a patient may be answered using the Article 1038 of the CC, and the legal interpretation given by our Courts in Savona v. Asphar.

It is assumed that MYCIN would be considered to be acting in a professional manner with the necessary expertise that is required in order to carry out its tasks. As such, the three flexible features stated by Camilleri Xuereb could be present in the functioning of MYCIN. It would seem very unlikely that an expert system would be ignorant of the modus operandi as this would be an integral part in its design. However, it is possible that MYCIN could have given a diagnosis in error – even the most advanced and sophisticated expert systems are not devoid of errors and glitches. Moreover, although the MYCIN system could be programmed to follow a certain set of professional standards, no one medical situation is the same as another. The standards which may have been programmed in the expert system may not be sufficient to cover all scenarios, resulting in lack of adherence to certain principles which flesh-and-blood experts may be able to implement more easily.

If one is to take the three features described by Camilleri Xuereb, it would be highly improbable that the MYCIN system would be held liable under Article 1038, given that the MYCIN is a highly sophisticated expert system and thus the three features are unlikely to concur concurrently. However, it is possible to attribute some form of professional negligence on the part of the MYCIN as there is a potential for error. The obstacle that is presented in this regard is that
an AI may not fall within the definition of professional as this term entails a
certain level of discretionary powers in decision-making.

3.4 Causal Link

The third element that is required in order to establish responsibility under
Maltese law is the existence of a causal link between the damage caused and
the action of the defendant. Von Bar holds that “causation is not always an
essential criterio
n of liability, and it will rarely be sufficient alone.”\(^\text{90}\) Our Courts
have systematically held that in order to establish liability, the plaintiff must
prove that defendant was the prime mover for the damages suffered by him –
this causal link must be immediate and direct. The element of causality being
“direct” arises out of Article 1137 of the CC which holds:

1137. Even where the non-performance of the obligation is
due to fraud on the part of the debtor, the compensation in
respect of the loss sustained by the creditor, and of the profit
of which he was deprived, shall only include such damages
as are the immediate and direct consequence of the non-
performance.\(^\text{91}\)

This article may be construed as relating to contract law, given that the article
itself mentions the terms “creditor” and “profit”; terms that are extraneous to tort
law. However, one can definitely have deprivation of some profit in tort when
damages occur. The non-performance of the obligation, although primarily
included in contract, may also apply in relation to tort law since one has the
duty, as mentioned earlier, to not harm others or cause damage to property
belonging to others.

\(^{91}\) Civil Code (n 2) Article 1137
In this scenario, the plaintiff must prove that the damages directly and immediately resulted from the defendant’s conduct. The plaintiff may also claim that there was more than one cause to the damage suffered by him, provided that each cause claimed by the plaintiff fulfils the “immediate and direct” requirement. The defendant, in turn, may claim that there is no direct and immediate causal link as the damage resulted from an irresistible force or supervening cause which he himself had no control over – in this case, the burden of proof is swapped from the plaintiff to the defendant who must now prove that there was indeed force majeure which was beyond his control.

It has been held that for causal link to be proven to exist, two tests must be satisfied: (1) there needs to be proof that the defendant acted intentionally or negligently and; (2) since this conduct may not always be the cause of harm suffered by the plaintiff, a further test needs to be fulfilled by examining whether that conduct resulted in the harm that is being claimed by the plaintiff.

In order to determine whether there is a causal link between the conduct and the harm caused, two schools of thought emerged: those who preferred a proximate cause approach and those who were more inclined to give causality a wider interpretation. The proponents of the narrower view held that the resultant harm had to be attributed immediately and directly to the defendant’s conduct. On the other side of the spectrum, those advocating a wider interpretation of causality, which is more victim-oriented, hold that it is enough to prove that an intentional or negligent conduct on the defendant’s part led to
the occurrence of a series of events which gave rise to the harm caused to the plaintiff.

Professors Hart and Honore’ observe that the point of departure between the two schools of thought is the proof of a *conditio sine qua non* which is referred to by British jurists as the “but-for” test. This test asks the question: had it not been for the conduct of the defendant, would the plaintiff have suffered harm? If the action of the defendant is a necessary and sufficient cause for the harm caused to the plaintiff, then the test would have been passed and a causal link established. Von Bar exemplifies this notion of causality thus: “Where someone drives too fast and is subsequently involved in a motor accident, his speeding will no doubt have been a factual cause of the accident: had he not been speeding, he would not have arrived at the scene of the accident when he did. However, that may not be sufficient to found his liability.”

In the case *Tarcisio Borg et. vs. Commissioner of Police*, the Court quoted Markesinis and Deakin when applying the “but for” test to the Maltese context: “Where damage results from multiple causes the courts often resort to the test of ‘but for cause’ – would the loss have been incurred but for the defendant’s negligence? This notion is based on the view that a defendant should be liable only to the extent that it can be shown that his conduct was a condition of the claimant’s hurt.” In this case, the Court held that the evidence brought proved

---

93 Von Bar (n 90) 437.
94 Ibid 413.
95 Borg Tarcisio Noe Vs Kummerjarju Tal-Pulizija, Civil Court, First Hall, per Mr. Justice Anthony Ellul, 18 September 2012
that the accident alone was sufficient to cause the damage claimed by the plaintiff, whereas the subsequent conduct of the ambulance crew could not by itself be deemed to constitute the cause of that type of injury. The court applied the “but-for” test in this respect by exonerating the ambulance staff, holding that their conduct was not sufficient cause for the harm caused to the plaintiff.

The “but-for” test may be applied in the case of allocating liability to the programmer of an AI that causes damage, as one may argue that had it not been for the programming of the machine which acted independently and cannot be interfered with, the damages resulting to the plaintiff would not have occurred. However, Von Bar was very critical with regards to the sole application of the “but-for” test, as he held that “the condition formula alone cannot designate of which of the infinite aspects of human conduct that causative effect is to be evaluated.”  

While the “but-for” test is mostly employed when attempting to properly allocate damages, the Courts tend to prefer the narrower interpretation of causal link – the proximate cause approach. This approach was defined in McDonald v Snelling as “that cause which in a natural and continuous sequence, unbroken by any efficient, intervening cause, produces the results complained of, and without which that result would not have occurred.”

The Proximate Cause approach is exceedingly popular in the case of torts arising out of traffic accidents. The Court has held that the collection of

97 Ibid 439
98 McDonald v Snelling [1867] 14 Allen 290, 96 Mass. 290
99 Ibid
evidence and reconstruction of the events by experts is vital in every case in order to determine whether a causal link exists. Although a breach of traffic regulations may be enough prima facie proof of fault, there is a necessity to prove that the breach was the proximate cause of the damage. ¹⁰⁰

Another test which the Courts need to apply in order to determine whether a causal link exists is whether the damage was foreseeable. If it the damage was indeed foreseeable then it is held that there was a direct and immediate connection of causality. The problem with foreseeability replicates the most common test for negligence; if you assume that foreseeability and negligence are determined by the same test then once negligence is proved than causality is also proven. Thus the two cannot be separated.

3.4.1 Interruption of the Causal Link

**Force Majeure**

In *Bonnici v. Ellul*¹⁰¹, the Court was asked to examine whether a causal link existed between the defendant’s conduct and the damage caused to the plaintiff. The defendant’s car caught fire while parked in the car park of Malta International Airport, and subsequently the fire spread to a car parked next to it, which belonged to the plaintiff. The defendant pleaded that he was not at fault as the damage resulted due to a fortuitous case which was beyond his control. The Court held that when the defendant raises a plea of force majeure, the onus of proof shifts on him to prove that the damage was caused by an accidental or unforeseen cause, and that his actions were not the immediate or

---

¹⁰⁰ Koll. Volum LXXVII (1993), Pt. 3, p. 93
¹⁰¹ Bonnici George Noe Vs Ellul Nicholas Et, Civil Court, First Hall, per Mr. Justice Philip Sciberras, 2 February 2005
intermediate cause of the damage. A fortuitous cause, *force majeure* or a state of necessity do not exculpate the defendant if he or she was at fault prior to the intervention of the extraneous cause. In this case, the Court did not uphold the defendant’s plea of force majeure as the defendant had failed to prove that the installation of the cassette player which he had undertaken was adequately carried out, or that he had taken all the necessary precautions to ascertain that the wiring was properly maintained.

**The Theory of Risk**

In the case *D’Amato vs. Camilleri*¹⁰² the Court was faced with the question of when the existence of a causal link can be presumed. In this case, the defendants were carrying out repairs on their boat within the confines of the Grand Harbour, and during the process of repairing the boat, a quantity of oil was spilled into the Harbour. After some time, the oil caught fire and damaged a nearby vessel. In this case, the CoA felt that the onus of proof should be inverted from normal procedure, that is, it held that since the defendants were carrying out what it deemed to be a dangerous activity, then the onus of proving that they were not at fault because the damage was caused through fault of third parties or force majeure rested on their shoulders.

The theory of risk was later expounded upon in the case *Michael D’Amato v. Filomena Spiteri et.*¹⁰³. In this case, the plaintiff’s son suffered a number of burns due to an accident related to the use of fireworks. The Court held that

¹⁰² (n 76)
¹⁰³ *D’Amato Michael Noe Vs Spiteri Filomena Et, Civil Court, First Hall, per Mr. Justice Philip Sciberras, 3 October 2003*
when a person involves himself in dangerous activities, that person must
necessarily apply all the precautions necessary to prevent damage from
occurring. The Court cited the jurist Charlesworth on the concept of volenti non
fit injuria who stated that: “A person who makes an agreement with another,
either expressly or by implication, to run the risk of injury caused by that other,
cannot recover for damage caused to him by any of the risks he agreed to
run.”104 The Court went on to hold that given this concept of risk, there was no
causal linkage between the behaviour and conduct of the defendants and the
damages incurred by the plaintiff’s son. The accident occurred solely through
the act of the plaintiff’s son and thus he was the only one to blame for the
injuries he sustained.

In the case of AI, the determination of a causal link between the damage
caused and the action of the AI is undoubtedly a very important one which must
be considered. Let us once again analyse the case of the Google AV. As
previously explained, this car has been designed to eliminate the flaws that
human drivers have, resulting in much safer driving and less traffic accidents.
Although one may consider that using one of these cars may qualify as a
“dangerous activity” given that it is a new technology and as such it would be
the user of this vehicle who would be presumed to have been at fault, as stated
in the D’Amato v. Camilleri105 case, the past few years have proven that
accidents which involve one of these AVs mostly involved contributory fault by
the human victim/driver of the other car involved in the collision. As indicated,
most accidents involved a front-to-rear collision, with the Google AV being at

105 (n 76)
the receiving end of the damage. However, one may also consider the programmer to be liable for damage caused by his AI through the application of theory of risk when he had programmed a system that evolves its decisions and algorithms completely independently from the wishes of the programme, such as in the case of the Google DeepMind, which is a complete black box once it begins its operations. 106

3.5 Contributory Negligence and Multiple Tortfeasors

The concept of causality also takes into account the possibility of contributory negligence on the part of the victim who has suffered damage. Lord Denning describes contributory negligence as “a man’s carelessness in looking after his own safety. He is guilty of contributory negligence if he ought reasonably to have foreseen that, if he did not act as a reasonable prudent man he might hurt himself.”107 This concept of contributory negligence is mostly relevant when the Court is to determine the proportion of responsibility which can be applied to the defendant, and this would have relevance when apportioning damages. There are cases where although it is the plaintiff who has suffered most of the damage, he is the one who is at fault for such damage having occurred in the first place. For instance, in the case of Pace v. Zerafa108, the plaintiff had parked his car in the middle of a horse race track resulting in the defendant’s horse colliding with the vehicle. The Court held that the plaintiff had interrupted the causal link when he had placed his vehicle in place where one would expect damage to occur.

107 Froom v. Butcher (1976) QB 286
108 Annunziato Pace vs. Anastasia sive Ines Zerafa, Court of Appeal, 13 January 1992 (unpublished)
In the *Attard v. Camilleri*¹⁰⁹ case, the Court examined in detail the effect that contributory negligence may have on causality. The Court held that contributory negligence may occur when the victim’s conduct constitutes a break in the link between the act of defendant and the damage suffered by the plaintiff. Contributory negligence may also occur when the plaintiff's conduct does not interrupt causation completely but reduces the effects of the defendant’s responsibility. The Court here confirmed that when applying Article 1051 of the CC, one does not require that the negligence on the part of the plaintiff caused the damage. However, it is sufficient to determine that that conduct contributed to the damage.

Our law also provides for the possibility of having multiple tortfeasors responsible for the same damage caused to the plaintiff:

1049. (1) Where two or more persons have maliciously caused any damage, their liability to make good the damage shall be a joint and several liability.

(2) Where some of them have acted with malice, and others without malice, the former shall be jointly and severally liable, and each of the latter shall only be liable for such part of the damage as he may have caused.¹¹⁰

Article 1050 continues by stating that where you have a situation where there is more than one tortfeasor, our law automatically introduces the concept of joint and several liability. When applying this concept to damages caused by AI, the programmer, the user and the AI itself may all be held liable through contributory negligence. This would make recourse to legal remedies easier for

---

¹⁰⁹ *Attard Leonard sive Leo Vs Camilleri John Et Noe., Civil Court, First Hall, per Mr Justice Joseph R. Micallef, 29 September 2009*

¹¹⁰ Civil Code (n 2) Article 1049
plaintiffs, as all the three parties may be sued and then the matter would be left to the discretion of the Court. Should one of the defendants feel that he had little or nothing to do with the injury caused to the victim, he may seek redress from the other defendants as is determined by Article 1050(1).

### 3.6 Liability of the AI itself

As explained earlier, it seems unlikely that a proximate cause link can be proven between the actions of the programmer and the conduct of the AI which results in injury to the victim, as once the AI becomes operational it develops its own conduct independently of the will of the programmer or the user. However, it is probable and somewhat obvious that a causal link will be proven between the AI itself and the damage suffered by the victim, this would entail the allocation of liability upon the AI itself.

In February 2016, the US National Highway Traffic Safety Administration (NHTSA), responsible for creating regulations for the use of roads within the United States of America, sent a letter to Google with regards to the status of the Google AV which held that “If no human occupant of the vehicle can actually drive the vehicle, it is more reasonable to identify the driver as whatever (as opposed to whoever) is doing the driving. […] In this instance, an item of motor vehicle equipment, the Self-Driving System, is actually driving the vehicle.”

In this way, the NHTSA has taken the first step into considering an AI as having its own legal personality and holding that AI liable for damage caused by its conduct.

---

An element of risk is created when one purchases an AI with the knowledge that if the AI causes harm the owner may be held liable for that harm. A measure that can be used in order to alleviate the burden that such purchase would cause is the possibility of creating, as the Romans did with the inclusion of *peculium*, as shall be further explained in Chapter 6, an insurance policy similar to the ones currently in place for vehicles or employer’s insurance that would shield the owner or user of the AI from paying out damages when an accident occurs, although this would only answer the question of “who pays for the damage?” rather than “who is responsible for the damage?”. Naturally in this context, for such an insurance policy to exist the technology that is slowly developing needs to be analysed further by insurance companies, in order to determine whether the risk of damages occurring could be too much to handle.

Holding the AI liable for the injury caused by it would make it easier for the plaintiff to obtain compensation, as shall be further explained in Chapter 6, since the plaintiff would simply sue the AI itself and there would be no need to prove fault or otherwise on the part of the owner, user or manufacturer.

### 3.7 Conclusion

This Chapter introduced the elements of tortious liability under Maltese legislation, focusing mainly on the elements which need to be present for direct liability to be attributed to the tortfeasor. In this Chapter, the elements of dolus/culpa, unjust act and causality were discussed with relation to their application to damage caused by AI. Given that the liability of the manufacturers was explored in Chapter 2, the Chapter sought to build upon the potential of
attributing legal personality to the AI which shall be explored in Chapter 6, and thus the possibility of holding the AI directly liable for injuries it causes.

Given that it seems improbable that legislators would grant the AI a separate and legal personality of its own, the next step is to determine who can be held liable for damages caused by something else. The next chapter will therefore delve into the concept of indirect liability under Maltese law and how this could be applied to injuries caused by AI.
4 Chapter 4: Indirect Liability in Tort

In order to assign responsibility for damage caused by an AI, one must examine the current legislation and jurisprudence regulating tort, with particular attention to indirect responsibility. The reason why this is an important regime that must be explored is that tort law has been developed to cater for situations where damage has been inflicted by one person on another with whom there is no real pre-existing relationship of any kind before the event which caused damage. The kinds of harm we are dealing with here are ones where the victim is very often uncertain who the real perpetrator of the harm is and where the pre-existing connection between the perpetrator and the victim is often not immediately obvious because the two are not in a clear contractual relationship.

For instance, in the case of damage caused by a Google AV while in autonomous mode\textsuperscript{112}, who can the plaintiff sue for compensation of damages? The user of the Google AV who, at the time of the accident, could not have gained control of the vehicle? The owner of the vehicle who allowed the user to utilise this machine? The programmer of the Google AV who structured the software in such a way as to limit human interference and avoid collisions with oncoming vehicles at all costs? A third party who caused the vehicle to swerve off the road in order to avoid the collision? This Chapter will deal with the notion of imputability and indirect liability for damage caused by the AI.

The question as to whether an AI has the capacity of willing and understanding the consequence of its actions has been one that puzzled robo-ethicists for

\footnote{\textit{Vide} Chapter 1}
some time.\footnote{Ibid.} Arguably, one can debate that although an AI does not have a will, as it has been programmed to act in a certain way by its programmers, it can, on some level, understand its actions and their consequences. In order to determine whether a machine is capable of having consciousness which would result in the possibility of it understanding its actions, John Searle drew a distinction between strong AI models which have a mind and mental states and weak ones which can only act intelligently.\footnote{Searle J, ‘Minds, brains and programs’ [1980] 3(3) The Behavioral and Brain Sciences <http://www.class.uh.edu/phil/garson/MindsBrainsandPrograms.pdf> accessed 30 March 2016} At the time of writing this thesis, technology does not yet exist for the creation of strong AI models, and as such we may only look at models which act intelligently but which do not necessarily have the will or understanding of their actions.

It would be difficult to propose that the paradigms of direct liability in tort can be applied to machines that cannot be said to intend or to fail to foresee the consequences of a certain line of action, unless of course legal personality is granted to the AI as is discussed in Chapter 6. This brings us to the possibility of applying indirect liability for damages in tort, as presently envisaged by our laws. The possibility of the machine being held directly liable is relatively remote, whilst the possibility of another person being held indirectly liable for the harm committed by the machine is a more immediate possibility. Another option is that one could also have direct liability on the part of the programmer or manufacturer of the machine for the damage inflicted, as explained in Chapter 2.
4.1 Imputability

The term imputability is used in a twofold manner: first, in order to determine who is liable for the injury caused and second, in order to determine who is at fault for such injury. One of the elements\textsuperscript{115} of tort law as expounded upon by Professor Caruana Galizia is that the act must be imputable to a person who is capable of committing a tort. In this regard, one may hold that any person who enjoys the faculties of will and understanding may be held liable for damages caused through his actions.\textsuperscript{116}

The law envisages the possibility of a person being liable for harm resulting from the activity of another person, animal or thing. This type of indirect responsibility refers to actions committed by persons who do not have the faculty of will and understanding, such as children, acts of animals or harm caused by things in one’s charge.

In the case PLC Fenech Noe v C. Gatt et\textsuperscript{117}, the Court held that under Maltese legislation and jurisprudence, the Court may only contemplate the modes of indirect liability as enlisted within the CC and no other forms of indirect liability may be applied. Our CC stipulates the specific cases in which indirect responsibility may be assigned by our Courts and such instances include: the indirect responsibility of the employer, indirect liability for minors or persons of unsound mind, indirect liability for animals, the indirect liability of the hotelkeeper and the liability for damage caused by the owner of a building. At

\textsuperscript{115} The other elements have been discussed in Chapter 3
\textsuperscript{116} Ibid.
\textsuperscript{117} Koll. Volum XVIII B (1901-1903) Pt. II, p. 164
present these are the only forms of indirect liability for damage that can be considered by Maltese Courts.

4.1.1 Indirect Liability of the Employer

The employer may be held liable for acts or omissions committed by his employee if some kind of fault can be attributed to the employer himself. The employer’s fault can occur either through: (1) *culpa in eligendo*, which refers to the employer engaging a person who is unfit for the tasks assigned to him or does not have the necessary qualifications or skill set to carry out such tasks, or through (2) *culpa in vigilando*, where the employer did not carry out the proper supervision over his employees. These two forms of fault can be seen in Article 1037:

1037. *Where a person for any work or service whatsoever employs another person who is incompetent, or whom he has not reasonable grounds to consider competent, he shall be liable for any damage which such other person may, through incompetence in the performance of such work or service, cause to others.*

In the case of *Tabib Joseph R. Grech v. Il-Kummissarju tal-Pulizija*, the plaintiff had been stopped from going abroad by a number of police officers due to a warrant of impediment that had been filed against him. However, this warrant of impediment had been lifted a while before the incident occurred and this resulted in the plaintiff missing his flight for no justifiable reason. Therefore, Dr. Grech filed a civil case for damages against the Commissioner of Police for

---

118 Civil Code (n 2) Article 1037
119 Koll. Volum LXXII (1988), Pt. 2, S. 1, p. 199
the negligence showed by his insubordinates. The Court explained that for the employer to be held liable for the acts or omissions of his employees under Article 1037, four conditions must be satisfied:

- There must be an employer-employee relationship
- The employer must be at fault through *culpa in eligendo*
- The act or omission of the employee must actually cause damage
- This damage must be a result of the employee’s subjective or objective incompetence.

This case seemed to convert the *culpa in eligendo* contemplated by our CC into *culpa in vigilando*, because while our CC speaks of the moment of appointment (i.e. the moment a person is employed), this case considered “appointment” to mean the moment when a task is assigned to the employee.

The Court remarked that in order for the employee to be considered incompetent, one needs to look at the *modus operandi* with which he acted. The Court came to the conclusion that Article 1037 of the CC provides both an objective test and a subjective test. This in effect means that employment of an incompetent person will expose the employer to damages irrespective of whether or not the employer was aware of the employee’s incompetence when he engaged him. The incompetence of the employee is to be determined on the basis of his behaviour in the instant when the incident took place and not as a general rule on his behaviour.
In Patrick Bezzina et noe v. Ministru tal-Edukazzjoni\textsuperscript{120}, an incident took place in a Government school where a child lost sight from one eye during a short period of time when the teacher had absented himself from the classroom. Although the Court’s analysis of this case seemed to be based on the contractual liability entered into by the school, the Court relied on various landmark tort cases. The Court held that “Ma għandux ikun hemm ebda distinzjoni bejn il-kura li obbligat jippresta missier tajjeb tal-familja lejn uliedu minn l-istess kura li l-iskejjel għandhom jipprovdju lill-istudenti li jkunu fil-kura tagħhom. L-ishkola qed tağixxi in loco parentes meta t-tfal qegħdin fil-kura tagħha. Hekk kif min ihaddem għandu obbligu li jipprovdi a safe system of work għall-impjegati tiegħu, u d-dmir li jipprovdi sorveljanza adegwata sabiex l-ambjent tax-xogħol ma jkunx konducenti għal kwalunkwe forma ta' incident li jippréġudika lill-impjegati tiegħu u hekk ukoll kif l-awtoritajiet li jkollhom taht ir-responsabilita' tagħhom playground għall-użu tat-tfal, iridu jipprovdi a safe system of play [...] u monitaraġġ adegwat hekk f'każ ta' skola, dawk kollha li jeżerċitaw funzjoni edukattiva għandhom fost l-iprem dover dak ta' vigilanza u tas-sorveljanza tat-tfal li t-tutela tagħhom tkun ġiet fdata lilhom.”\textsuperscript{121}

The Court concluded that all the defendants, who included the Minister for Education, the Director of Education and the School Headmaster, were all responsible for the damages caused to the child. The teacher who had

\textsuperscript{120} Bezzina Patrick Et Noe Vs Ministru Tal-Edukazzjoni U Risorsi Umani, Court of Appeal, 3 October 2008
\textsuperscript{121} Translation: “There should be no distinction between the required care that a good father shows to his children a family and the same care that schools must provide students who are in their care. The school is acting in loco parentis when children are in its care. As an employer has an obligation to provide a safe system of work for his employees, and the duty to provide adequate oversight on the working environment so that it is not conducive to any form of incident prejudicing employees and just as authorities have under their responsibility playgrounds intended for children’s use, there needs to be a safe system of play [...] and adequate monitoring in the case of a school, all those who exercise the educational functions have amongst their prime duties that of vigilance and monitoring of children whose guardianship has been entrusted to them."
absented himself was not found to be responsible, as it was common school practice for the teacher to leave the classroom slightly earlier as long as he left a prefect in charge for that time period. The School Headmaster was held to be responsible for not enforcing proper systems which safeguarded the safety of the students at all times. The Minister and the Director for Education were held to be responsible for appointing the headmaster who was considered by the Court to be incompetent.

An analogy may be made with regards to the liability that is incurred by the employer for his employee’s actions. As stated above, for this type of liability to occur, there must necessarily be an employer-employee relationship and the task that was carried out by the employee when the harm occurred was performed in the line of duty.

For the last few years, automated machines have been employed in a number of fields to carry out tasks which human workers would rather avoid. All automated systems are created with the sole aim of fulfilling a set of specific tasks. For instance, the multi-millionaire pioneer of social networking Mark Zuckerberg has recently announced that he has begun work on creating a robot nanny to take care of his daughter. As opposed to a flesh and blood nanny, this robot nanny will be “on duty” 24/7, something which no human nanny would be able to do. Thus, any harm that may befall a human by such Nanny, if the analogy of employer vicarious liability is applied, will automatically result in Mr Zuckerberg as the owner and employer being held responsible for such

damage. If the robo-nanny becomes commercialised in a manner that parents utilise it for the care of their children, each parent, according to the vicarious liability incurred by employers, would incur liability for damages caused by the robo-nanny during the course of its employment if it is deemed to be incompetent for the task assigned to it.

Moreover, in the case of the liability of the employer for actions committed by his employee, as was seen in the conclusions of the Court in Tabib Joseph R. Grech v. Il-Kummissarju tal-Pulizija, the employer may be held liable for damages caused by an incompetent employee. The question of whether or not an employee is considered to be incompetent has to be analysed in the instant when the incident took place, and not as a general rule on his behaviour. This interpretation of incompetence may be applied in the case of an owner-robot scenario if the robot is given a task which it is not capable of performing within the given context.

**4.1.2 Indirect Liability for Minors or persons of Unsound Mind**

The law foresees that certain persons may not be held liable for damages caused by their actions as they do not have, for the purposes of the law, the necessary faculties of will and understanding. These persons include persons of unsound mind and children under the age of nine years. If damage is caused by such persons, then the law envisages a level of indirect responsibility for their carers, guardians or parents if the plaintiff can successfully prove that there was negligence on the part of the parent.
1034. Any person having the charge of a minor, or of a person with a mental disorder or other condition, which renders him incapable of managing his own affairs, shall be liable for any damage caused by such minor or such person, if he fails to exercise the care of a bonus paterfamilias in order to prevent the act.\textsuperscript{123}

Article 1034 specifically mentions that for parents to be held liable for the actions of their child, they must have failed to “exercise the care of a bonus paterfamilias in order to prevent the act.” Therefore, the law places a great deal of importance on the fault that can be attributed to the parents. If a parent is seen to have acted responsibly, then that parent cannot be held liable for the actions committed by his offspring.

The Courts have established that liability for damage caused by minors is not only limited to those persons vested with parental authority, since other persons who are entrusted with the care of the child at any given point in time may also be held indirectly liable for any harm that child may cause, including teachers, as held in \textit{Pasquale Zerafa v. Carmelo Gauci}\textsuperscript{124}.

The reason why the law imposes this vicarious liability on parents is in cases of failure to adequately supervise their charges, which supervision may have prevented the act from occurring. In the landmark case of \textit{Formosa v. Borg}\textsuperscript{125}, a twelve-year-old child riding a horse collided with a car being driven by the

\textsuperscript{123} Civil Code (n 2) Article 1034
\textsuperscript{124} Koll. Volum XXXIX.D (1955), Pt. 4, p. 799
\textsuperscript{125} Koll. Volum LXXVII (1993), Pt. 3, p. 178
plaintiff. The plaintiff sued the child’s father under article 1035, since the child could not be sued personally. The Court remarked that for a child of twelve, as stated in Article 1035, to be held liable in tort, the plaintiff must prove that he acted “with a mischievous discretion” i.e. with the consciousness of doing wrong. If this mischievous discretion is proven, the child may be held personally liable for the damages caused. In this case, the Court concluded that the boy was not acting with mischievous discretion as he had requested his father’s permission to ride the horse.

The basis of fault of the parents is *culpa in vigilando*, which implies duties of supervision, surveillance, vigilance and care. Thus in order for the parents of a child who caused damages to exonerate themselves, they must prove that they have acted as bonus paterfamilias. In the case of *Calleja v. Gauci*, two children under the age of five crossed the road haphazardly, resulting in the plaintiff colliding with another car in order to avoid running the children over. The plaintiff sued the father of the children for the damages caused to his vehicle and to the other vehicle. The Court held that the father could exonerate himself by proving that he had acted as a bonus paterfamilias, and done everything within his power to prevent the accident from happening. In this case, the Court found that the father had not acted as a bonus paterfamilias as he had allowed his children to run about in the streets, thus finding the father liable for the damages caused.

---

This notion of bonus paterfamilias was given further depth in the case Carmelo Micallef St. John et. Richard Spiteri et.\textsuperscript{127}, where a minor stole his father’s car and consequently ran over a jogger, resulting in the jogger’s death. The First Court held that although our CC does not define the notion of bonus paterfamilias, Article 1032\textsuperscript{128} indicates that a person needs to act “prudently and diligently”, which is therefore what the parents need to prove in order to exonerate themselves from liability. In this context, this would include taking all the necessary measures in order to prevent the act from happening, such as hiding the car keys. Moreover, the Court was under the impression that this was not the child’s first car escapade, and the father had been aware of this fact.

The Court in various occasions highlighted the fact that the supervision of minor children is not the only thing that has to be done in order to exonerate parents from the strict liability imposed on them. The Court in Xerri pro et noe v. Sultana et\textsuperscript{129} held that the parents, in addition to their duty to supervise the actions of their offspring, had a duty to educate their offspring. In this case, the minor in question, together with a passenger, had been driving a motorcycle without a licence and through reckless driving caused the death of the passenger accompanying him. The Court observed that the parents in this case were to be held liable as they had failed to educate their son that it is wrong, illegal and dangerous to drive without a licence. The Court reaffirmed this \textit{culpa in educando} by quoting Article 7(1) of the CC which states that:

\textsuperscript{127} Micallef St John Carmelo Et Vs Spiteri Joseph Spiteri Richard Et, Court of Appeal, 15 January 2002

\textsuperscript{128} Civil Code (n 2) Article 1032

\textsuperscript{129} Xerri Victor Et Pro Et Noe Vs Sultana Julian Et, Civil Court, First Hall, per Mr Justice Anthony Ellul, 16 September 2009
7(1) Parents are bound to look after, maintain, instruct and educate their children in the manner laid down in article 3B of this Code.\textsuperscript{130}

Ugo Pagallo holds that there is a better analogy to be drawn between the position of children and animals in the eyes of the law and the position of AI, rather than likening AI to a product.\textsuperscript{131} As opposed to a product, AI is designed to be interactive with the environment that surrounds them in order to adapt their programming to respond properly to external stimuli. Just like children and animals, AI is autonomous and has control over the actions they perform, as opposed to products in general.\textsuperscript{132} Despite the fact that AI does not possess morals or emotions, they can represent a “new meaningful target for human censorship”.\textsuperscript{133} David McFarland in his book Guilty Robots, Happy Dogs, suggests the same analogy should be drawn, given that similarly to children and pets, we must also teach AI to distinguish right from wrong.\textsuperscript{134}

In order to determine which type of indirect liability, if any, can be applied to the situation where an AI causes harm to a person, one needs to look at the way in which that technology has been programmed to function. In his article Socially Intelligent Robots, Dautenhahn\textsuperscript{135} distinguishes between human-centred versus robot-centred human-machine interface (HMI). In a human-centred HMI, the

\textsuperscript{130} Civil Code (n 2) Article 7(1)
\textsuperscript{131} Pagallo U., The Laws of Robots - Crimes, Contracts, and Torts (1st edn, Springer 2013)
\textsuperscript{132} The possibility of placing children and robots on the same scale was also briefly discussed in Leroux C, ‘Suggestion for a green paper on legal issues in robotics’ as part of an expert exercise conducted by the euRobotics Association.
\textsuperscript{133} Ibid. p. 39
\textsuperscript{134} MacFarland D., Guilty Robots, Happy Dogs: The Question of Alien Minds (1st edn, Oxford University Press 2009)
main focus relies on how a robot can perform the tasks assigned to it in a manner that is “acceptable and comfortable to humans”\(^{136}\), which would make the applicability of liability for owners of animals more appropriate. On the other hand, if the HMI is robot-based, the emphasis is placed on the autonomy of the machine as being able to carry out its own aims based on its own thought-process and motivations\(^ {137}\), which in turn would make the parallel between AI and children more plausible.

Given that technology is likely to venture into further levels of autonomy, it would be rather futile to only look towards the manufacturers and designers of the system as those liable for any damages caused through the AI’s actions, unless of course the damage results from a defect in the system as prescribed by the product liability regulations.\(^ {138}\) Consequently, it is more likely that lawmakers will look into any negligent behaviour on the part of the owner or user of the system when determining liability. The owners or users of the machine are more likely to know the rationale that was used for the machine to achieve a particular conclusion as the system’s actions are often a response to their use of such system.

If the theory of vicarious liability of parents for damages caused by their children is to be applied to AI, one needs to look at the machine with the same perspective as one looks at a child under the age of nine. If this theory is adopted, an AI machine, could never be held liable for its own actions, even if it had knowledge of the consequences that would result from such actions.

\(^{136}\) Ibid. pg 684
\(^{137}\) Ibid. pg. 683
\(^{138}\) As discussed in Chapter 2 of this thesis.
4.1.3 Indirect Liability of Owners/Users of Animals

Another source of indirect responsibility as contemplated by our CC is that for damages caused by an animal. Article 1040 of the CC holds that the owner or the user of an animal shall be liable for any damage caused by it, regardless of whether the animal was under “his charge or had strayed or escaped.”

The reason for this goes back to a time when animals were the main machines that were used in agriculture industry. The Italian jurist De Ruggiero holds that the reason why an owner or a user of an animal is held liable for any damages caused by their charge is because of the principle that if a person extracts an advantage for the use of the animal, then he must also bear all the disadvantages of responsibility for any of the such animal.

The principle established in Article 1040 seems to hold that the owner or the user of the animal is responsible irrespective of whether or not the owner conducted proper supervision and training of the animal. Maltese judgments seem to have interpreted Article 1040 to gradually broaden the possible grounds for exculpating the owner or the user of the animal.

The case Giacomo Frendo Azzopardi v. Bartolomeo Bezzina concerned the collision between a horse-drawn cart and a horse-drawn carriage. In this case, the Court maintained that Article 1040 was absolute in nature and responsibility cannot be done away with by proof of absence of fault or the exercise of due

---

139 Ibid., Art 1040. The owner of an animal, or any person using an animal during such time as such person is using it, shall be liable for any damage caused by it, whether the animal was under his charge or had strayed or escaped.
141 Civil Code (n 2) Article 1040
142 Koll. Volum XV, p. 479
diligence on the owner’s part. The Court went on to state that the only manner in which an owner could exonerate himself was by proving casus, or fault of the victim.

This line of thought was not followed in the case of Paolo Mallia v. Annetto Xuereb Montebello143, where the Court held that responsibility for damage caused by an animal falls upon the proprietor or the user if there has been absence of due vigilance. The Court held that this is a responsibility based on the concept of culpa in vigilando, as in the case of parental responsibility mentioned above. The Court as such held that “Il-lijgi tippresumi kwindi li kien hemm nuqqas ta’ sorveljanza u ta’ kustodja da parti ta’ sidu jew ta’ disattenzjoni jew inkurja ta’ min kien qieghed jisserva bih, u kwindi ta’ htija, il-ghaliex minghajr htija ma jistax ikun hemm responsabilita.”144

In the case of Farrugia v. Calleja145, the Court went further by stating that the owner or user of an animal can exonerate himself not only on the basis of force majeure or fault of a third party but also if the owner can prove that he had exercised all the due diligence necessary to prevent the accident from occurring, therefore applying the principle found in liability incurred by parents for acts committed by their children. However, this case was an exceptional one that went against the doctrine established in previous judgments.

143 Koll. Volum XLVIII.A (1964), Pt. 1, S. 1, p. 20
144 Translation: “The law, thus, presumes that there was a lack of supervision and custody on behalf of its owner or lack of attention by the person making use of it, and thus there is fault, as without fault there can be no responsibility”
145 Farrugia Anthony vs. Calleja Carmelo, Court of Appeal, 28 February 1969
In Mallia v. Xuereb Montebello\(^{146}\), the Court delved into the definition of an “animal” and interpreted this term in a wide manner, given that the provision in the CC does not provide any distinction between domesticated animals and those which are not domesticated\(^{147}\). This was also upheld by our Courts in Frendo Azzopardi v. Bezzina\(^{148}\), which as stated above, held that the fact that horses are considered to be domesticated and tame animals at the best of times does not exonerate responsibility for damage caused. As such, Giorgi commented that there is no distinction in liability for damage caused by a cow and damage caused by a lion\(^{149}\).

The Courts have also intervened in the case Amato v. Spagnol\(^ {150}\) to make it clear that the user of the animal, not being the owner, is only liable insofar as he is deriving a benefit from the use from the animal. This can be seen as expanding the scope of the owner’s liability when the animal is not under his control and thus, reinforcing the original emphasis of Article 1040 that the owner remains liable even if the animal has strayed or escaped. This can only be applied if the plaintiff can prove that the animal that caused the damage belonged or was in the service of the defendant\(^ {151}\).

By applying the indirect responsibility placed on parents and owners or users of animals to the actions of an AI, it becomes easier to allocate responsibility for

\(^{146}\) (n.143)

\(^{147}\) A theory that is also upheld by Geri in Responsabilita’ Civile per danni da cose ed animali, (2nd edn, Giuffre, 1967) p. 321

\(^{148}\) (n 142)

\(^{149}\) Giorgi G., Teoria delle obbligazioni nel diritto moderno italiano: esposta con la scorta della dottrina e della giurisprudenza (7th edn, Fratelli Cammelli 1907) 201

\(^{150}\) Amato Mark Anthony Vs Spagnol Charles, Civil Court, First Hall, per Mr Justice Noel V. Arrigo, 5 October 2001

\(^{151}\) Middle Sea Insurance p.l.c. et v Victor Sammut, Court of Appeal, per Mr Justice Philip Sciberras, 02 June 2003
the damage inflicted by the latter. Given that the technology is fairly new and
despite its increasing popularity, it is not yet widespread, taking the analogy of
animals,\textsuperscript{152} owners or users of AI can exonerate themselves from responsibility
by claiming that the action which was actuated by the AI was unforeseeable and
inevitable and therefore, invoke force majeure as a defence. When compared to
the system of parental liability, one faces the challenge of determining what due
diligence and, or supervision the owner of an AI could have performed in order
to exculpate him. This is especially relevant when one considers that the reason
for employing AI is simply to have the task being sorted in the background
without the need for human intervention.

The fact that an owner or user of an animal is responsible for its “actions”
regardless of whether at that point in time, the owner or user could have or
could not have exercised control is highly relevant to liability for AI. For
example, besides matters relating to safer driving, one of the key aspects of the
production of AVs is the liberty such a vehicle would give to those who find
commuting from one place to another cumbersome and a waste of time. As
such, these vehicles have already developed the ability to drop off their human
“drivers” and proceed to find parking independently, resulting in the driver not
being anywhere near his car from the time he is dropped off to the time when
the car parks itself somewhere.\textsuperscript{153} Current legislation which has been developed
in the United States of America, such as NV AB511, would still hold the owner

\textsuperscript{152} The analogy of assimilating robots with animals has been discussed by various scholars in the field
such as Pagallo U. (n 131) and MacFarland D. (n 134)

\textsuperscript{153} Burgess, R. “Tesla Model S owners can now summon their cars” (Autocar, 16 March 2016)
<$http://www.autocar.co.uk/car-news/new-cars/tesla-model-s-owners-can-now-summon-their-cars>$
accessed 30 March 2016
or driver of the vehicle responsible for any damage it may cause during that period of autonomy.

4.1.4 Liability of the Custodian/Owner of property

Under Maltese tort law, two other forms of indirect liability exist; that of the hotel-keeper\textsuperscript{154} and the occupier of a building. The inclusion of these two separate forms of indirect liability exhibits the primitive nature of Maltese tort law when compared to its French counterpart.

Article 1041 of the CC provides that the owner of a building shall be liable for any damage which may be caused by its fall, if such fall is due to want of repairs, or to a defect in its construction, provided the owner was aware of such defect or had reasonable grounds to believe that it existed.\textsuperscript{155} The proviso to Article 1041 indicates that there must some fault on the part of the owner. Despite the uncertainty that surrounds this article over who should prove such fault on the part of the owner of a building, this is the only instance within the Maltese CC where the owner of property or thing is held liable for damages caused by that property. The Court in Vella Giovanni Et Vs Cilia Michael\textsuperscript{156} went on to hold that the owner of the building is likewise liable for damage caused by installations and additions made to the building itself, and not merely for damage caused by the collapse of the structure of the building itself. The Court referred to the article found within the Italian Civil Code which holds that

\textsuperscript{154} Civil Code (n 2) Art 1039. 
\textsuperscript{155} Ibid. Art 1041.
\textsuperscript{156} Vella Giovanni Et Vs Cilia Michael, Court of Appeal per. Mr Justice Philip Sciberras, 23 June 2006
“ciascuno e` responsabile del danno cagionato della cose che ha in custodia, salvo che provi il caso fortuito”\textsuperscript{157}

Although both Maltese and French tort law stem from the same source, that is, the Code Napoleon, France has advanced its tort law over the course of time, whereas the Maltese equivalent has remained unchanged for decades. A notion that is foreign to Maltese legislation which has proven itself to be a great success in France is that of the liability of custodian, also known as the responsabilit\'e du fait des choses, which was developed through the interpretation of Article 1384 of the French CC which holds:

\begin{quote}
A person is liable not only for the damages he causes by his own act, but also for that which is caused by the acts of persons for whom he is responsible, or by things which are in his custody.\textsuperscript{158}
\end{quote}

Nowadays this notion has developed to such an extent that it seems that the owner of a thing cannot exonerate himself of responsibility by proving that he was not at fault. Responsibility of the custodian can only be done away with if the owner proves force majeure.\textsuperscript{159} This notion of responsabilit\'e du fait des choses adds another layer of indirect liability, which similarly to the liability of the owner of an animal, as explained above, holds the owner or the user of the animal or thing liable for any damage caused by it, regardless of whether the owner was at fault or not.

\begin{flushright}
\textsuperscript{157} Il Codice Civile Italiano, Art. 2051  
\textsuperscript{158} Code civil des Français, Art. 1384  
\textsuperscript{159} Mazeaud, Lecons de Droit Civil (Tome II/ Premier Volume); 9 th ed. (1998), p.652 “Le défendeur fait tomber la presumption…en démontrant une cause étrangère….Trois événements sont susceptibles de constituer une cause étrangère: événement de force majeure, fait d’un tiers, faute de la victim.”
\end{flushright}
In the **Jand’heur**\(^{160}\) case, the Cour de Cassation established two rules for *responsabilité du fait des choses* to subsist:

1. Article 1384 attaches responsibility to the keeper of the thing and not to the thing itself.
2. Article 1384 provides a presumption of responsibility on the keeper. He cannot exonerate himself on the ground that he has not committed a wrong, but only an outside cause can exonerate him.\(^{161}\)

This form of liability bases itself on a notion of equity, as does the notion of liability of the owner or keeper of the animal where strict responsibility is placed on the person who derives a profit out of the use of such animal or thing. In his thesis, Dr. Samuel Bezzina draws a comparison between this derivation of profit and professional risk or the notion of created risk given that the thing is being employed to carry out certain tasks from which he derives a gain.\(^{162}\)

The **Franck**\(^{163}\) case defined the term “guardian” as that person who is responsible for the use, direction and control of the thing, which effectively means that it is the person who is able to perform certain actions with the thing. This created a legal anomaly, as a person who is unsound of mind or a minor may in practice be held to be liable for damage caused by a thing that they controlled at the time. The owner of the thing is presumed to be the guardian of the thing, however, the owner may rebut this presumption by holding that at the

\(^{160}\) Cass., Ch. Réunies, 13 February 1930  
\(^{161}\) Bezzina, Samuel "The evolution of 'responsabilité du fait des choses' in French tort law: an overview and comparison with Maltese tort law on the indirect liability for things" (2009) p 17  
\(^{162}\) Ibid.  
\(^{163}\) Cass. Ch. Réunies, 2 décembre 1941
time the damage was caused the thing was being used by someone else who had the direction and control of the thing.\textsuperscript{164}

Considering the judgment given in \textit{PCL Fenech v. Gatt}\textsuperscript{165}, the Court is unlikely to apply the above contemplated forms of indirect liability to damage caused by AI, since this liability may not appear to be covered by Maltese tort law. However, if such form of liability is inserted in our CC through legal amendments, one would do well to consider the French notion of liability of the custodian as a viable option for attributing responsibility to the owner of an autonomous machine which can cause damage to third parties.. The case \textit{Bonnici v. Ellul}\textsuperscript{166} came close to applying this concept of liability of the custodian, insofar as the Court created a presumption that the owner of the vehicle was responsible for the harm caused by it. In doing so, the Court reversed the normal application of burden of proof in Court cases upon the defendant. However, the result of the application of the \textit{responsabilite' du fait des choses} would be largely identical to the ones perceived if an application of the liability of the owner/keeper of the animal is held responsible.

\textbf{4.2 Conclusion}

There is lively debate amongst scholars as to the best way to tackle AI in our law. Although the basic structure and functioning of an AI are determined by the manufacturer, designers and engineers, it is the user's input that finally shapes the actual actions that are to be performed by the AI. The way a user treats his AI and the tasks he bestows upon it are matters which are completely beyond

\textsuperscript{164} Civ. 2\textdegree, 28 novembre 2002
\textsuperscript{165} (n 117)
\textsuperscript{166} (n 101)
the control of the manufacturers. Should the current laws concerning indirect responsibility applied to children and animals likewise be applied to AI?

This Chapter gave an overview of the current legislation and jurisprudence governing indirect liability under tortious regime. Various persons have been shortlisted to assume liability when damages occur to a third party due to the actions of the AI through the application of current notions of vicarious liability.

The user of the AI may be held liable both under vicarious liability imposed on employers and that imposed on users of animals. However, the criterion for these two forms to apply is different. Whereas an employer can be held liable only if it is proven that there was *culpa in eligendo* or *culpa in vigilando* over the person who committed the delict, the user of an animal has been seen to bear strict responsibility regardless of whether or not the user was actually at fault. The user of the animal may only exonerate himself if he proves that the victim contributed to the injury or if force majeure was present.

Similarly, the owner of the AI can likewise be held liable vicariously through analogy of treating the machine as an animal.

However, the regime that seems to make most sense when applied to the context of tortious liability for damages by AI is the parental vicarious liability, which indicates the owner of the machine as the person liable for any damages caused. The reason why this seems to be the more plausible solution is because whilst employers’ liability is based on *culpa in eligendo* or *culpa in*...
vigilindo and the liability of the owner or user of the animal is given a slightly broader interpretation, liability of parents takes the middle ground.

Parents are only held liable if it is proven that they did not act in a manner that is considered to be conducive to a bonus paterfamilias. If the parents can adequately prove that they acted diligently, prudently and took all the necessary precautions to ensure that their offspring are taught what was right and what is wrong and there was the expected level of supervision, the parents are exonerated from liability. The PCL Fenech v. Gatt\(^{167}\) case, however, creates a problem with regards to the application of such form of indirect liability as this cannot be applied to cases concerning AI without legislative amendments to the CC. These amendments would include a new form of liability which can cater for any damage caused by AI in the contexts described. In order not to have such a specific provision within our legal text, the legislator may opt to insert provisions similar to those found within the French CC concerning responsabilite du fait des choses.

In the same manner, the user of the AI is the person that provides the necessary inputs to the system that determine how its evolutionary algorithm develops in order to ensure that all of the AI’s actions are in conformity with what the user believes is the correct method of procedure, similarly to the parents educating their child. Moreover, the user of the AI would be able to exonerate himself from liability if he is able to prove that the action committed by that AI could not have been prevented by him, as he had exercised all the

\(^{167}\) (n 117)
due diligence in ensuring that such damage would not have occurred. A difficulty that would arise if the parental liability analogy is adopted with regards to AI, is that unlike parents who are taking care of young children and thus are constantly observing their behaviour and ensuring that the child is not left alone, the main purpose of using an AI machine in precisely to be free to do other things. As such, the AI will be left to conduct its own operation with minimal or no supervision from the user of the machine which would result in the inapplicability of liability of parents based on *culpa in vigilando*. 
5 Chapter 5: Other Contractual Foundations for AI Liability

So far, the possibility of resolving the issue of who has liability when an AI causes damages has been examined through the application of notions of tort law and product liability. However, AI is also capable of entering into rights and obligations through the use of contracts. AI is being employed in a widespread manner in a number of industries such as trade, manufacturing, and construction, where the determination of who is responsible for any damages or breach of contract needs to be determined according to the circumstances in which the AI is placed.

Each situation in which an AI is utilised entails a different type of risk, as there are a number of robots which can be considered to be easily predictable and thus “safe” when carrying out functions. However, other robots may be considered to have a more volatile nature. When speaking of risk, Frank Knight\textsuperscript{168} holds that there are two types of risk: proper risk and proper uncertainty. Proper risk refers to the risks which are measurable and could be foreseen, whereas proper uncertainty refers to risks which are not easily quantifiable. When it comes to determining risks for such advanced technologies, it is difficult for one to ensure that all the risks have been covered. This was the same issue that had developed in the 1950s with the proliferation of nuclear power reactors. Whereas nuclear engineers could safely determine what the obvious risks could be, the science behind nuclear technology was so new that there was no concretely established methodology to determine what

\textsuperscript{168} Knight F., Risk, Uncertainty and Profit (Reprint of 1st edn, Sentry Press 1957)
the probabilities were for such risks to materialise. Hence, nowadays experts do not attempt to determine the probability of an accident occurring, preferring to test the system for weaknesses instead. This is especially relevant when risks cannot be quantified due to certain reactions to human-machine interfaces which cannot be determined. Programmers and engineers have an expression - “the ghost in the machine” - which refers to unexpected outcomes caused by low-level interactions between machine code and hardware that causes unexpected outcomes, such as a processor skipping an instruction every 10,000 CPU-cycles.169

The issue of determining what the risks are, becomes even more important when one considers insurance companies, which are normally third parties to a contract which is intrinsically related to the possibility of an accident occurring. As indicated above, there are AIs which have been in service for an established period of time, and are therefore predictable enough to apply traditional risk assessment to them. On the other side of the coin, there are new machines, such as Unmanned Aerial Vehicles (UAV), which present a number of issues due to the unpredictability of their behaviour. For instance, in 2006 a UAV used by Customs and Border Protection in the United States170 suffered a systematic malfunction, which resulted in the artificial ground operator switching off the fuel supply to an engine of the UAV and in the aircraft crash-landing in the Arizona

desert. Thankfully, it inflicted no damage; however, it flew precariously close to residential areas. It is evident that when it comes to contracts, the ever-increasing levels of autonomy of AI are going to raise various legal questions; especially when calculating the foreseeability of the harm for the purpose of assigning responsibility in negligence or fault.

5.1 Elements of Contract Law

Article 960 of the CC is the key provision relating to contracts. It holds that “a contract is an agreement between two or more persons by which an obligation is created, regulated or dissolved.” This article provides the rule that there must be an agreement between two or more parties to the contract; the Romans called this concept consensus ad idem which has been commonly translated to “a meeting of the minds” where the two parties are in full agreement with and they give their consent to the contractual obligation they are entering into.

5.1.1 Consent

Doctrine has held that there are four stages that must be completed before consent is deemed to be given. The first stage comprises the internal volition to enter into a contract – a party to the contract must be willing to bind himself to the conditions therein. Consent must be definitive following the termination of negotiations between the parties and must also be freely given by that party without any forms of duress suffered by the party giving consent.

171 Civil Code (n 2), Article 960
The second stage of the consent process is the external manifestation of this internal will to contract. This manifestation of consent varies according to the type of contract that is being entered into. For instance, if the contract contemplates the transfer of immovable property, our law indicates that this needs to be done through a public deed as the expression of the external manifestation of the parties’ consent. However, there are other forms of contracts where the consent is manifested either expressly (written or oral consent) or tacitly.

As one may deduce, tacit consent creates a number of legal issues and has long been the subject of debate in legal doctrine. Tacit forms of consent are all those positive or negative acts which, though they are not signs destined for the manifestation of ideas, implicitly show that the person who performs them wants to bind himself. The positive tacit form of consent has often been readily accepted as although there is no verbal acceptance of the contract, the parties here will act in a manner that is deemed to indicate such consent.

The negative form of tacit consent creates further legal issues. For instance, if Y is owed €100 from X but Y does nothing in order to recuperate that sum, is Y tacitly renouncing to his right to recuperate his assets? Traditionalist jurists believe that consent can be manifested tacitly and negatively but one must always prove an intention to renounce. Thus, in the example given above, Y would not renounce to his right for repayment, unless there was a proven willingness on his part to renounce to that right. The modern view, on the other hand, holds that if by Y’s inactivity X assumes that there was renunciation of
that right, the law would protect X who was acting in good faith, regardless of whether Y really intended to renounce to this right or not.

Since they apply the *teoria della volonta’*, Maltese Courts have generally upheld the traditionalist view on tacit negative consent. Indeed, in *Sammut v. Azzopardi*¹⁷² the Court held that it is possible for one to renounce to his rights in tacit negative form only if there is a clear indication that there was the “volonta” to renounce to that right and the facts are absolutely irreconcilable with the intention to conserve that right. In a more recent case¹⁷³, this rationale was once again reaffirmed and the Court held that for tacit consent to exist the person consenting must be fully aware of the consequences of such consent, and his conduct must be such that it can be irrefutably interpreted as consenting, which tacit consent must clearly and unequivocally result in such.

It is vital that what is externally manifested corresponds with what the parties intended; if there is a discrepancy between the internal will of the party and the external manifestation, then there could also be a defect in consent. If there is such a discrepancy one needs to determine whether this occurred through voluntary or involuntary means. Involuntary discrepancy between the internal will and the external manifestation results from vices of consent such as error, fraud or violence, whereas voluntary discrepancy is the result of simulation, that is, when one of the parties simulates consent by intending to do something but manifests the intent to do something else. The distinction between the two is of utmost importance, as if there is a vice of consent, the contract or the term

---

¹⁷² Koll. Volum LXXVII (1993), Pt. 2, S. 1, p. 368
¹⁷³ Gauci Joseph vs. MCL Ltd., Court of Appeal, 20 October 2003
within the contract is rendered null and void, whereas if there is simulation, any third parties who are acting in good faith are protected.

The third stage of consent holds that consent must be forthcoming from all parties to the contract, since all the parties must have the will to contract. They must express this will externally and this will needs to relate to the same subject matter. If one of these elements is lacking, it would result in error in corpore or error in negotio.

The fourth and final stage of consent is the union of acts of volition. When there is concurrence between the parties’ wills, their consent becomes binding and it would not be lawful for those parties to revoke it. A proposal does not bind the person who makes it and can freely be withdrawn, unless the other party declares his acceptance. Which leads us to the question: when is a contract deemed to be accepted? Various theories have been developed in order to answer this difficulty.

The theory of declaration holds that as soon as the offeree declares his acceptance of the offer, then the contract is complete. Proponents of this theory hold that as soon as there are two consents existing at the same time, the contract is concluded. The theory of transmission, on the other hand, holds that one should not only accept the offer but this acceptance needs to be transmitted to the offeror. The theory of reception holds that the contract is concluded once the acceptance is received either by the offeror or by the offeror’s business. Lastly, the theory of information holds that the other
theories are merely a process which needs to be extinguished before the offeror is informed of the offeree’s acceptance. It is only once the offeror is aware that acceptance has been granted that the contract is concluded.

Professor Caruana Galizia stated that the theory of information is the most appropriate way of determining when a contract has been concluded, as in order for there to be a union of wills it is not enough that these have been externally manifested; such manifestations themselves must also be united. This implies that they must exist externally vis-a-vis the other party, which is not possible unless the intention of each is made known to the other. However, Caruana Galizia also held that in practice this system could be detrimental to honest trade as it gives the offeror a longer time window in which to revoke his declaration, which can make the existence and the perfection of the contract difficult to prove.

Indeed, our Courts have adopted a system that is more akin to the theory of reception. In the case Accountant General v. Alex Vella,175 the Government had issued a tender for the supply of certain materials and the offer had to remain valid for two months. The defendant, on behalf of his company, submitted a tender and kept the offer open for two months as had been requested. On the last day, the Government called the defendant’s company to inform them that the offer had been accepted. The employee who received the phone call did not inform anyone and as such the defendant was not made aware of this acceptance. The defendant claimed that a letter of acceptance had only

174 Caruana Galizia (n 68) p. 13
175 The Accountant General vs. Alex Vella on behalf of the G.S Falzon Company Limited Commercial Court’ (Commercial Court) (27th July 1989)
reached him after the lapse of two months and therefore his offer was no longer valid. The Court quoted various jurists and held that once the offer was made, the defendant had to keep his place of business open in order to receive the acceptance. If the system had not been managed efficiently and there was a lack of communication between the employee and the director, the offeree should not be made to suffer for such failure. As such, the Court held that once the Government had phoned the company and informed the company of its acceptance, then the contract was concluded – reaffirming that the theory of reception is the one that is applied.

Despite the fact that our Courts have upheld the theory of reception as the standard for determining when a civil contract has been concluded, the matter is somewhat different when it comes to contracts concluded at a distance or through electronic means. Article 110 of the Commercial Code, which deals with commercial contracts which are concluded at a distance, states that it is the theory of information which is applicable in such instances. Moreover, Article 10 of the Electronic Commerce Act states that:

“10. Unless otherwise agreed by parties who are not consumers, where the recipient of the service places his order through technological means:
(a) an electronic contract is concluded when after placing his order, the recipient of the service has received from the service provider an acknowledgement of receipt of the order made by the recipient:
Provided that the service provider must acknowledge receipt of the order made by the recipient without undue delay and by electronic means; and

176 Commercial Code, Chapter 13 of the Laws of Malta, Article 110 states: A contract stipulated by means of correspondence, whether by letter or telegram, between parties at a distance, is not complete if the acceptance has not become known to the party making the offer within the time fixed by him or within such time as is ordinarily required for the exchange of the offer and the acceptance, according to the nature of the contract and the usages of trade generally.
(b) the order made by the recipient and the acknowledgement of receipt are deemed to have been received when the parties to whom they are addressed are able to access them."

Thus when it comes to e-contracts and commercial contracts it is the theory of information that applies, seeing as it is incredibly easy for a service provider to miss an acceptance that has reached him electronically. This creates an additional layer of assurance in order to ascertain that both the trader and the buyer are protected when dealing electronically.

5.2 Agency

In order to address the burden placed upon traders for the conclusion of e-contracts, given that as indicated in Article 10 of the Electronic Commerce Act, there is often a hefty process that needs to be exhausted before a contract is deemed to be concluded, traders have resorted to the law of agency, in particular, the possibility of utilising artificial agents to conduct their trades.

Trading artificial agents carry out a variety of transactions without the intervention or indeed supervision of humans. In this context, a question arises whether such artificial agents should be treated either as tools for humans or as agents in their own right. If one were to consider the former, then the rules on product liability outlined above might apply to them, in the sense that their producers and manufacturer would be liable for any damage caused through defects in their agent’s software. However, these agents carry out a series of complex business transactions which create rights and obligations between the various parties. For instance, if one takes the software used in airlines which automatically changes the pricing on fares for flights depending on a number of

177 Electronic Commerce Act, Chapter 426 of the Laws of Malta
factors such as demand, season and availability of the seats for that particular flight,\textsuperscript{178} it would not necessarily be correct to merely consider these artificial agents (AAs) as tools used by humans to carry out business, as some AAs carry out the business transactions on their own. Once again this depends entirely upon the type of AAs which are being employed.

The US National Conference of Commissioners for Uniform State Laws (NCCUSL) and the Uniform Electronic Transactions Act (UETA) of 1999 define an “electronic agent” as:

\begin{quote}
“a computer program or an electronic or other automated means used independently to initiate an action or respond to electronic records or performances in whole or in part, without review or action by an individual”\textsuperscript{179}
\end{quote}

Although the above definition has formed part of US e-commerce law for over 17 years, neither the Maltese Electronic Commerce Act nor its model, the EU E-Commerce Directive 2000/31/EC, contain such a definition. The UETA definition is by no means perfect; whilst it focuses on the possibility of AAs to act in an automated manner, it completely negates the fact that such systems can act autonomously and not just automatically. The UETA definition therefore once again places the AA in the position of a tool employed by a trader.\textsuperscript{180}

Ebay\textsuperscript{181} and Amazon\textsuperscript{182} use an artificial agent in their online auctioning system. Bidders place bids on an item and, once the time period elapses; the artificial

\begin{footnotes}
\textsuperscript{179} Uniform Electronic Transactions Act (UETA) (1999) (No.40) s. 2(6)
\textsuperscript{180} Notes to UETA (n. 40) s. 2(6)
\textsuperscript{181} Chopra S. and White L. F., A Legal Theory for Autonomous Artificial Agents (1st edn, University of Michigan Press 2011) 66
\end{footnotes}
agent awards the item to the highest bidder. In this case, the agent is considered to be a Zero Intelligence agent, which means that they are unaffected by their surroundings, their only aim being to acquire the highest possible bid regardless of the environment in which they operate. 183 Ross Miller points out that irrespective of the fact that such robots are considered to be Zero Intelligence robots, they are capable of carrying out double auctions 184 “just as well, if not better than, humans […]” 185.

In order to determine whether artificial agents are merely tools or agents in their own right, the US Code, Title 15, Chapter 96, Article 7001(h) states that a contract or a transaction “may not be denied legal effect, validity, or enforceability solely because its formation, creation, or delivery involved the action of one or more electronic agents so long as the action of any such electronic agent is legally attributable to the person to be bound” 186. However, the UN Convention on Electronic Communications in International Contracts Documents held that it would not be correct to use the general principles of agency for artificial agents, as ultimately it is still a natural or a legal person which utilises such system and which is bound by the obligations created by the computer programme. 187 Fundamentally, the UNCITRAL leaned towards the

---

182 Ibid 82
184 A system in which buyers enter competitive bidders and sellers enter competitive offers simultaneously, as opposed to the over-the-counter market, where trades are negotiated. Read more: http://www.investorwords.com/1550/double_auction_market.html#ixzz41rVGf6sV
186 15 U.S. Code § 7001(h)
notion that artificial agents are mere tools used by traders which are legal or natural persons.

This theory that AAs are tools thus holds that a principal (P) engages the use of an AA to create a contractually binding obligation with a third party (T). In this context, the actions of AA directly bind P for their performance, as there is a principal-agent relationship. If T suffers damages due to the irregular behaviour of AA he may turn to AA’s principal for compensation.

One argument that can be made is that an AA can never be considered to be an agent suo jure, as the law of agency relates to legal persons. The Maltese law of agency is governed by the law regulating mandate\(^{188}\). Article 1856 defines mandate as:

\[
\text{“1856. (1) Mandate or procuration is a contract whereby a person gives to another the power to do something for him.”}^{189}
\]

The article defining mandate thus clearly states that for mandate to occur there must be a contract between one person and another. However, the law then makes it clear that the agent need not have the capacity in his own right to conclude contracts. Article 1869 holds that minors may be appointed as mandataries, although they must necessarily be legal persons who are subject to rights and obligations. One may thus conclude that an agent who does not have any legal rights or obligations is nothing more than a tool used by the trader.

\(^{188}\) Commercial Code, (n 176), Article 49: “In the absence of any agreement, law or custom to the contrary, mercantile agency is governed by the provisions contained in Title XVIII of Part II of Book Second of the Civil Code so far as applicable, with the exception of article 1861”

\(^{189}\) Civil Code (n 2) Article 1856
Mandate creates a tripartite relationship between the mandator, the mandatary and third parties with whom the mandatary has contracted. A mandator is bound to carry out the obligations contracted by the mandatary in accordance with the powers which he has given the latter. He is not liable for what the mandatary has done beyond such powers, unless he has expressly or tacitly ratified the mandatory's contract (for instance by silence and inaction).\footnote{Vide Appendix B} \footnote{N/A, ‘Law Report: Ratification Of obligations’ (The Malta Independent, 25 November 2009) <http://www.independent.com.mt/articles/2009-11-25/newspaper-opinions/Law-Report:-Ratification-Of-obligations-266771> accessed 29 March 2016}

If one were to consider AAs as tools, one needs to determine what their capacity as tools is, in the sense that one needs to determine what role that tool plays in the trading process. If the AA is being used as a contracting tool, then the parties which employ such tools will be held liable for the contracts entered into by these agents. AAs may also be deemed to be communications tools when they communicate the terms and conditions set out by their principal to the potential client. However, this concept of communications tool encounters obstacles when one considers that contracts may also be carried out between AAs themselves without human involvement.

Up until now, when speaking of AAs we have considered the AA conducting a transaction on behalf of his principal with a human third party. However, what would happen if an AA of Trader A concludes a contract with an AA of Trader B, with neither traders being involved at all in the process? In order to provide a clear example of such a transaction, let us assume that Trader A is on the
market for a specific set of supplies. In order to evaluate all the possibilities and which ones best cater to his needs he engages the use of an AA (AAA) which will scout the market, compare options and, when the right product is found, make a purchase. Trader B, on the other hand is the supplier of the said product, he also utilises an AA (AAB) to conclude contracts with prospective buyers; once an offer is placed AAB determines whether this is acceptable or not and proceeds with the transaction. As such, we have a contract that was formulated between AAA and AAB, who are acting on behalf of their principals but who have done so autonomously from their principals.

As was stated earlier in this chapter, the parties become bound to the performance of the contract when the offeror receives the offerree’s acceptance to a contract that encapsulates the intentions of both parties. In the scenario outlined above, irrespective of whether one adopts the communications tool concept or the contracting tool concept, the agreement between the principal parties is a fiction, as neither A nor B are even aware that a contract is being concluded. The agreement which may be concluded between the two AAs may not resemble at all what A and B had in mind since there may be a lack of consensus ad idem. However, this agreement still binds both A and B.

The AA-as-tools theory has been considered by many\textsuperscript{192, 193} to be flawed, as through the promulgation of this theory one still cannot determine the consequences of a contract such as the one we have outlined above. Moreover, if this theory is adopted, responsibility for the AAs actions are divided between

\begin{footnotesize}
\begin{enumerate}
\item Pagallo (n 131) 99
\item Allgrove B. D., "Legal Personality for Artificial Intellects: Pragmatic Solution or Science Fiction?" (MPhil thesis, University of Oxford 2004) 13
\end{enumerate}
\end{footnotesize}
its operator and its user, as they are the principals of the AA which may perform erratically due to malfunctioning software or hardware or through errors of specifications of the contract.

5.3 Contractual Relationships

Contractual relationships between the producer of the technology and its user will depend upon the mode in which such technology has been acquired. Such a relationship may give rise to two contractual obligations. For instance, when it comes to expert systems, the relationship between the developer and the user is determined by the contract of acquisition, which inter alia regulates this relationship by establishing the rights and duties of the seller and the buyer, and a licensing contract which controls the user's application of the system.

Contractual liability arises when there is a breach of contract, which takes the form of a lack of performance of an obligation enlisted within the contract. If the product is defective compared with what was indicated in the contract, this is considered to be a breach of the producer's duty to adequately perform his obligations in ensuring that the user enjoys the use of such product. If such breach exists on the part of the producer, the user is entitled to either cancel the contract through rescission, in which case there may also be a claim for damages on the part of the victim of the contractual breach, or else the victim may ask for the proper performance of the obligation that had been previously breached.

Although the traditional idea of contract was the negotiation of terms between the various parties involved, nowadays the use of standard form contracts has
become quite popular, especially when dealing with commercial contracts. Our Courts have accepted these forms of contracts, as was made clear in the case Rizzo v. Dawson\textsuperscript{194}. The issue with such standard form contracts is that they often include a number of exemption clauses which shield the trader from liability against certain breaches of contract. Our courts have held in numerous cases that unless the trader specifically brings these clauses to the attention of the other party, they will not be treated as valid.

The EU Directive on unfair terms in consumer contracts, which was later transposed into the CAA established a list of clauses which are deemed to be unfair terms\textsuperscript{195}. Clauses which fall under the ambit of the Directive are those that are not individually negotiated, meaning a term that was drafted in advance which the consumer could not have been able to influence. This is also the case in pre-formulated contracts. It rests with the seller to prove that a term has been individually negotiated. If the consumer has negotiated the term, it is deemed to be adequate protection from the risk of imposition of unfair terms.

An Annex to the Directive provides a non-exhaustive list of contract terms that are legally considered unfair. Among these, we find terms that try to prevent consumers from carrying out their rights at law when the seller is at fault. In such situations, consumers have the right to cancel the contract of sale and no contract clause can take away this right. Unfairness is assessed by taking into account the nature of the goods and the time of conclusion of the contract. This discretion of determining whether a term is unfair is vested in the judges of a

\textsuperscript{194} Edward Rizzo Ne. Vs Col. Charles E. Dawson Ne, Volum XXXVII.A, Pt. 1, S. 1, p. 183

\textsuperscript{195} Vide Appendix C
national court. Moreover, an unfair term in a consumer contract does not nullify an entire contract, instead it is that particular term that becomes ineffective. The rest of the contract is normally valid unless the contract is unworkable without that term.  

When it comes to litigation dealing with robotics, no machine has had as much infamy as the da Vinci Surgical System (DVSS) which is a robot operated by a human located in a separate room. The DVSS performs incredibly complex and sensitive surgeries, most commonly prostatectomies, with minimal invasiveness. The reason why this machine has had a series of lawsuits against it is, as deduced by Edoardo Datteri, is “negligence due to poor training with the robotic system: surgeons were not given enough time and resources to learn to use the robot properly.” Perhaps the most famous case concerning this surgical system is Mracek v. Bryn Mawr Hospital and Intuitive Surgical Inc. In this case, the patient, Mr. Mracek underwent a prostatectomy through the use of the DVSS. During the procedure the system malfunctioned, resulting in Mracek suffering from groin pain and erectile dysfunction. Mracek sued the hospital in which his surgery was undertaken together with Intuitive Surgical Inc., the company that produced and designed the system. With this suit, Mracek went beyond what the rules of Product Liability allow by suing the hospital which used the robot.

---

198 Mracek v. Bryn Mawr Hospital et al, 363 F. App’x 925, 926 (3d Cir. 2010)
There is a contractual relationship between Intuitive Surgical Inc. as the producer and manufacturer of DVSS and its client Bryn Mawr Hospital which is the user of the system. The contractual relationship between these two and the conditions for use of the machine is a matter that is entirely reserved to them to decide. Moreover, there is also a contractual relationship between Mr Mracek as the patient and Bryn Mawr Hospital as the service provider for such operation.

These relationships raise various interesting points. Firstly, during the procedure, the operation of the robot was left entirely in the hands of the surgeon who was remotely controlling the system. One therefore cannot hold that in such case the responsibility falls squarely on the shoulders of the producer, as the user himself could have intervened to ensure that the system was shut down in order to prevent irreparable damage to the patient. Therefore, in this case the plaintiff can turn to two parties for compensation: the hospital itself for not providing an adequate environment for the function of the robot or for the inadequate training of its staff in the use of this robot, or the surgeon himself for lack of a professional duty of care or negligence in the performance of his profession.

Secondly, in terms of strict product liability the manufacturer or producer of the product is held strictly liable only if his product is defective or malfunctions. It is up to the plaintiff to prove that the machine was defective due to some oversight from the manufacturer’s part, causing the plaintiff’s injury. In this case, the plaintiff failed to submit an expert report which would have detailed the failures
in the system resulting in his injuries occurring. Mr Mracek claimed that the fault was so obvious that no expert report was needed, citing the fact that the system continuously flashed error signals, as confirmed by the surgeon operating the machine. Due to this, the plaintiff did not succeed in his claims since he had failed to prove that there was a defect in the robot or that such defect was the result of his injuries occurring. This was also confirmed by the CoA. The importance of expert witnesses and expert reports in order to determine whether there was any form of lack of standard of care on the part of the operating surgeon using a DVSS was also illustrated in Galigiano v. Kaouk\textsuperscript{199} and Williams v. Desperito\textsuperscript{200}.

\textbf{5.4 Conclusion}

This Chapter explored the contractual relationships and obligations that may be entered into by AI. The contractual relationships that exist between the user of the AI, the producer of the AI and the injured third party elaborated upon in the case Mracek v. Bryn Mawr Hospital, which was also instrumental in determining that for the producer of the machine to be held liable the plaintiff had to clearly demonstrate that the damage was caused due to a fault in the machine itself. In this case, the plaintiff had failed to provide an expert report which would have conclusively given evidence as to whether or not the system malfunctioned. Due to this failure, the producer of the DVSS was exonerated from liability.

One of the issues that was discussed extensively in this Chapter was the notion of determining when consent is given in instances where a third party contracts

\textsuperscript{199} Gagliano v. Kaouk, 2012-Ohio-1047 (Court of Appeals of Ohio, 2012)

\textsuperscript{200} Williams v. Desperito, C. A. N09C-10-164-CLS (Superior Court of Delaware, 2011)
with an AA or when AAs form a contract between themselves in the context of an AA undertaking the same functions as an agent and not as an employee. If the AA is considered to be an employee, as in the case of the AAs used by eBay, then the legal framework discussed in Chapter 4 would be applicable. Whilst some AAs carry out the same functions as agents or manadataries under civil law, these AAs cannot be deemed to be agents under the current legal regime, as that title is only reserved for “legal persons” who have rights and obligations. In this context, therefore, would it be possible to attribute some form of personhood to an AI in order to ascertain that contracts concluded by it are safeguarded and the consequences predicted?
Chapter 6: Personhood for Artificial Intelligence

The definition of the term “person” has never been fully agreed upon and remains ambiguous and uncertain. According to Professor Muscat, one of the reasons why the matter remains vague is due to the fact that “jurists have often failed to rid the term ‘person’ of its original and essentially human overtone”. Salmond defines a legal person as a being which is capable of having rights and duties attributed to him, a being which is also capable of interests that may be affected by the acts of others.

Essentially, legal personhood is divided into two categories: physical personhood and juridical personhood. Physical personhood is conferred upon all human beings who are born alive and viable. Juridical personhood arises from the law itself, in the sense that a juridical personality is granted to a group of physical persons (universitas personarum) either through statute or through pronouncements of the Court. Not all groups of persons are endowed with juridical personality; families, for instance, are not considered to be a juridical person.

Juridical personality may also be granted to single physical persons, such as through the creation of a single-member company. In certain instances, the law also allows juridical personality to be granted to a group of things (universitas rerum) which “when used of a juridical person, signifies a juridical person the underlying reality or substratum of which is collection of goods or things (e.g. real estate, securities, cash) which have been set aside for a particular apostolic

201 Muscat A., Principles of Maltese Company Law (1st edn, Malta University Press 2007) 167
202 Salmond J., Jurisprudence or The Theory of the Law (1st edn, Stevens & Haynes 1902) 334
purpose (e.g. worship, education, justice, charity) and which, prior to the conferral of juridical personality, are often referred to as funds, such as education, buildings or retirement funds. The creation of a juridical person creates a separate legal entity which is distinct from the physical persons who formed it. A juridical person has its own rights and duties which are to be respected and it can also acquire assets and incur liabilities. It is important to underline that such assets and liabilities would be considered to belong to the juridical person itself and not to the physical persons who compose it.

6.1 Definition of “Person”

The legal definition of the “person” is of such great importance that it is the first substantive article found in the Maltese CC. Article 1A, which was introduced in the Code by means of Act XIII of 2007 states:

1A. (1) Persons may either be natural persons or legal persons.

(2) When used in any law the term “person” shall include both natural persons as well as legal persons, unless the context otherwise requires.

(5) Legal persons enjoy all rights and powers pertaining to natural persons except those excluded by their very nature, by their constitutive act or by an express provision of law.

Moreover, Article 4(d) of the Maltese Interpretation Act defines the term “person” as:

(d) the expression “person” shall include a body or other association of persons whether granted legal personality, in accordance with the provisions of the Second Schedule to the Civil Code, or not

204 Civil Code (n 2) Article 1A
205 Interpretation Act, Chapter 249 of the Laws of Malta, Article 49(d)
The inclusion of this definition within the Interpretation Act was the cause of some controversy when it was originally introduced in 1975, as it varied from the above definition in the sense that it previously stated that “The expression ‘person’ shall include a body or other association of persons whether such body or association is corporate or incorporate”. In 2007, this phrase was substituted by the definition we currently have in order to, according to the then Justice Minister Hon. Dr. Carmelo Mifsud Bonnici, move away from the concept of “corporate and incorporate” which was a Common Law notion, and define “person” in a term which is more akin to Roman law.

Under Maltese law, juridical personality is granted to corporate bodies either upon registration or through ad hoc legislation. The most common form of juridical person is the creation of a limited liability company, which, according to the Companies Act, “has a separate personality distinct from that of its members”. Companies are granted personhood upon registration with the Registrar of Companies. However, there are other entities, normally public corporations, which are endowed with juridical personality through ad hoc legislation which creates the entity itself, such as local councils, the Malta Financial Services Authority, and the Malta Stock Exchange.

The law also envisages the possibility of “quasi-juridical personality” which up until now has been granted to SICAVs and cells in cell companies. This means that, as stated in Regulation 9 of LN 241 of 2006, the sub-fund under a SICAV

---

208 Companies Act, Chapter 389 of the Laws of Malta, Article 4(4)
is considered to be a distinct legal entity which is separate from the overarching fund company. Regulation 9 goes on to state that if proceedings are brought against one sub-fund within the principal company, this will not affect any other sub-funds of that company. With regards to cells within cell companies, the matter is different since L.N 218 of 2004 clearly states that:

“(2) Notwithstanding that a cell company may have created one or more cells (a) a cell company is a single legal person and (b) the creation by a cell company of a cell does not create, in respect of that cell, a legal person separate from the company”. 210

6.2 Theories of Personhood

The notion of personhood has been debated by scholars and jurists alike for decades; from the time of the Romans to the present. Throughout the years, various scholars have attempted to formulate a theory that could give a philosophical foundation allowing personhood to be granted to things other than humans.

Savigny was a great proponent of the “fiction theory” which holds that the juridical person is an artificial entity created through a fiction of the law211 and thus, since they are not “real” persons, they cannot be subjected to rights and duties. The concession theory takes the fiction theory a step further by stating that corporate bodies are not granted legal personality until this is conferred upon them by the sovereign state through promulgation of law. This theory,

209 L.N 241 of 2006 Regulation 9 holds: “A multi fund company may in its memorandum of association elect to have the assets and liabilities of each sub-fund comprised in that company treated for all intents and purposes of law as a patrimony separate from the assets and liabilities of each other sub-fund of such company. Where a multi fund company makes the election aforementioned the assets and liabilities of each sub-fund of that multi fund company shall, for all intents and purposes of law be deemed to constitute a patrimony separate from the assets and liabilities of each other sub-fund of such a company.”
210 L.N 218 of 2004 Regulation 3
does not place juridical persons and physical persons on the same scale since it holds that it is only the personality of the State which is akin to that of human beings. Jhering expounded upon the fiction theory by claiming that the creation of a juridical entity is merely symbolic, as ultimately the subjects of that juridical entity are the humans who form it and who are tasked with accomplishing the purpose of the group.

Other theorists moved away from the fiction theory, the realist or the organic theorists claimed that the juridical person does not owe its existence to recognition by the State or that it is merely a facade to the physical persons forming part of it. Gierke held that the juridical personality is vested when there is a “collective spirit”. Another theory which opposes the fiction theory is the theory of social organisation, which states that for juridical personality to exist, four elements must subsist concurrently: (1) a purpose which is to be achieved; (2) an interest of that group; (3) an organisation of physical persons set up to achieve that purpose; and (4) the manifestation of the will of the component members.

Berle, on the other hand, holds that juridical personality subsists due to the underlying enterprise of the body in question. The State’s approval that a corporation is set up indicates that the assets, liabilities and operations of that corporation exist for the fulfilment of the underlying enterprise. Where, however, the corporate entity is defective, or is otherwise challenged, its existence, extent

---

212 Von Jhering R, Geist des römischen Rechts auf den verschiedenen Stufen seiner Entwicklung (1st edn, Breitkopf & Hartel 1865) 285
213 Muscat (n 201) 178
214 Ganado J.M., ‘Notes on Prolegomena’, Faculty of Laws, University of Malta, 1965, 64
and consequences may be determined by the actual existence and extent of operations of the underlying enterprise, which by these very qualities acquires an “entity characteristic” of its own recognised by law. 215

6.3 Rights of Juridical Persons

Physical and juridical persons have the capacity to hold rights and obligations, although some rights and obligations cannot be attributed to juridical persons due to the very nature of the right or obligation itself, such as matrimonial and familial rights. However, juridical persons have the capacity to sue and be sued in their own name, to enter into contractual obligations with third parties and also to enjoy certain fundamental rights and freedoms which are enlisted in the Constitution and in the European Charter for Human Rights.

Tamburrino held that in Italy, a moral person holds the right to exercise its juridical capacity free from political manoeuvres, the right of privacy when it comes to matters related to its business; the right of secrecy and confidentiality of correspondence, the right to hold meetings; the right to access state-funded legal aid and the right to petition to the House of Representatives. 216 This stance is likewise adopted in the Maltese legal system. In Chapter IV entitled “Fundamental Rights and Freedoms of the Individual”, Article 32 states that “every person in Malta is entitled to the fundamental rights and freedoms of the individual.” 217 Of course, a number of the rights and freedom listed in this Chapter cannot be attributed to the juridical person as they are directly addressed to physical persons, such as references made to race, colour, creed,

215 Muscat (n 201) 179
216 Tamburrino G., ‘Persone Giuridiche e Associazioni non riconosciute’ (1st edn, UTET 1980) 266
217 Constitution of Malta, Article 32
sex, sexual orientation or gender identity. However, other rights such as “liberty, security of the person, the enjoyment of property and the protection of the law”\textsuperscript{218} can appertain to the juridical person as well.

Articles 41 and 42 of the Constitution of Malta\textsuperscript{219} relating to the protection of freedom of expression and of assembly and association likewise apply to juridical persons. This was asserted in the landmark case Francis Zammit Dimech et noe. v. Commissioner of Police\textsuperscript{220}. This case concerned the permission to be granted by the Police Commissioner for the organisation of a demonstration by the Student Representative Council. The Commissioner refused to grant such permission claiming that a demonstration on the same matter was being held on the same day by the General Workers Union. The Student Council claimed that the Commissioner had refused to grant permission in order to quash dissenting opinions against the Government and claimed a breach of fundamental freedoms under Articles 41 and 42 of the Constitution. Although the First Court denied the demands of the Student Council, upon appeal the Court held that Articles 41 and 42 did indeed apply to juridical persons and went on to uphold the decision of the First Court stating that the Police Commissioner did not have the authority to refuse an application to conduct a demonstration and it is the fact that he refused the application nonetheless that constituted a breach of constitutional rights.

The right for one to protect his reputation can likewise be applied in respect to juridical persons, as was held in Brandon Elton Goodwin pro et noe et vs.

\textsuperscript{218} \textit{Ibid} Article 32(a)
\textsuperscript{219} \textit{Vide} Appendix D
\textsuperscript{220} Koll. LXXIII (1989), Pt. 1, p. 154
Anthony Bartolo pro et noe\textsuperscript{221}, which concerned the possibility of a moral person suing for slander. The CoA held that it was entirely possible for an entity whose reputation may have been tarnished to sue for slander. This case however had to be dismissed as the libellous writings were not aimed at the entity itself but at an employee of the entity and thus it was not the reputation of the entity that was in jeopardy but that of the individual. This line of thought was reaffirmed in the case The Honourable Mabel Strickland OBE noe et v. Joseph James Scorey\textsuperscript{222}, where the CoA held that it was within the company’s rights and interests to protect its corporate reputation.

Undoubtedly, however, it is within the realm of patrimonial rights that juridical persons focus most of their energy, as in this context the differences between a physical and a moral person are minimal in nature.

### 6.4 Liability of the Juridical Person

In terms of civil liability, juridical persons, like physical persons, may be subject to either contractual or tortious liability. While it seems obvious that a juridical person can be held liable for contractual obligations it has entered into and any liability resulting there from, the matter is somewhat different when it comes to tort.

Although the accepted principle nowadays is that juridical entities may be held liable in tort\textsuperscript{223} this has not always been the case. In Dr. Victor E. Ragonesi noe

\textsuperscript{221} Brandon Elton Goodwin pro et noe et vs. Anthony Bartolo pro et noe (Criminal Court of Appeal 31.10. 1938)

\textsuperscript{222} Koll. Volum XXXIII.G (1949), Pt. 4, p. 941

\textsuperscript{223} Muscat (n 201) 429
v. Raymond Mallia, the Court held that “għad-delitti u kwazi-delitti ma jista jirrispondi ħadd ħlief min jagħmilhom. [...] Delitti jew kwazi-delitti per definizzjoni ma jistgħux jikkommettuhom ħlief persuni fizżiċi – qatt persuni ġuridiċi- propju għaliex huma [...] persuni ideali tad-dritt. U l-ideal fid-dritt ma jikkompredix id-delitti u l-kwazi-delitti” The Court goes on to state that the only way in which a juridical person may be held liable in tort is when there is culpa in eligendo concerning an employee or a person in his charge, as has been discussed in Chapter 4. The same view was held in the case Anthony Bugeja v. Carmelo Agius et where it was held that “ebda korp morali ma jista’ jikkommetti delitt”.

The reasoning of the Court in these two cases, amongst others, was later overturned. Indeed, various other judgments hold that a juridical person is capable of being held liable in tort. In Albert Mizzi noe v. Rev. Prof George Schembri, the Court held “Soċjeta’ kummerċjali għandha personalita’ ġuridika u jekk persuni illi skont l-istatut ta’ soċjeta’ kummerċjali għandhom il-fakolta’ illi jaġixxu f’isem is-soċjeta’ u jagħmlu atti f’isem l-istess soċjeta’ u fl-interess ta’ l-istess soċjeta’, u dawn l-atti jikkostitwixxu spoll, hija s-soċjeta’ illi tkun responsabbli għall-ispoll.” This was once again reaffirmed in the case David Jones et v. Dr. Mifsud Bonnici et however it also made a qualification. In examining the case, the Court made reference to L.C.B. Gower, and adopted one of his theories which held that: “companies can be liable in tort and crime

224 Dr. Victor Ragonesi noe vs Raymond Mallia, Commercial Court, 30 May 1989
225 Translation: “For delicts and quasi-delicts no person other than the perpetrator is answerable. [...] delicts and quasi-delicts by definition can only be committed by physical persons – never by juridical persons – because they are the ideal persons. And the ideal in law does not comprehend delicts and quasi-delicts.”
226 Koll. Volum LXXV. Pt. II. p. 418 Translation: “No body corporate can commit a delict”
227 Koll. Volum LXXVI P. I p. 212
228 Jones David Et Noe Vs Mifsud Bonnici Dr Giuseppe Noe Et Pen, Court of Appeal, 29 October 1993. Translation: “A commercial entity has legal personality and of the persons entrusted to act in the name of the company under the statute and to do acts on behalf of the same company and in the interest of the same company, and these acts constitute spoliation, is the company that is responsible for the spoliation”
but only if these are committed in the course of the intra vires activities … In principle this seems to be the soundest view. A company may be liable for torts or crimes committed in pursuance of its stated objects but should not be liable for acts entirely outside its objects.” 229 Prof Muscat is likewise of the opinion that companies may sue and be sued just like physical persons in tort in Malta. 230

Juridical persons are considered to have a will through the participation of the physical persons who compose that juridical person. The juridical person’s decision-making component is hence considered to be that juridical person’s will. Although the juridical person has a right to sue and be sued in its own name, since the corporation is not a physical person it requires the input of physical persons who are given the power to represent the company and act in its name and on its behalf.

When a company is found to be liable to pay damages in tort or in contract, the assets which are recoverable are those of the company itself and not of its underlying members; hence, the need for a company to have a separate legal personality from the persons who form it. This ensures that those persons’ personal assets and liabilities are protected and distinguished from those of their company. Although the limited liability of the company’s members is sacrosanct to the modern concept of company law, some instances exist in which those same members may be found liable for the company’s actions – this is known as the “piercing or lifting of the corporate veil”.

230 Muscat (n 201) 215
In his thesis, Dr. Mikel Calleja states that there are three instances in which the corporate veil is lifted and the members behind it are found liable.\textsuperscript{231} The first instance regards a specific legislative provision which makes a member of the company directly liable together with the company, if that member continues to carry out business in the name of the company six months after the number of members of the company is reduced to one.\textsuperscript{232} Generally speaking, companies are required by law to have a multiplicity of members and as such the reduction of the members to a number below two creates a breach of legally imposed regulation of companies.\textsuperscript{233} The second instance in which the corporate veil is pierced is when the members willingly made themselves personally liable through a contracting clause. The third instance occurs when the Court believes it is in the best interest of the creditors to lift the corporate veil.

When the corporate veil is lifted, the shareholders of the company become personally, jointly and severally liable for the fulfilment of the company’s obligations. The piercing of the corporate veil is justified when a shareholder, member or director abuses of the corporate veil, which leads to fraud and misrepresentation. The veil will likewise be pierced if the Court believes that the company is being used as a facade to cover the dealings of one or more particular members of the company. It is the shareholders who are generally rendered liable once the corporate veil has been lifted. Directors and other corporate officials are not normally considered to be liable due to the piercing of

\textsuperscript{231} Calleja M, \textit{Environmental liability : piercing the corporate veil and its implications}, (LLD Thesis, University of Malta) 2013 pg 54
\textsuperscript{232} Companies Act (n 207) Article 214(4)
\textsuperscript{233} Muscat (n 201) 246 et seq
the corporate veil. Directors would be liable for breach of a duty imposed on them by law.

Professor Cremona opined that the juridical character of directors of a company is akin to that of mandataries when dealing internally within the company, and as agents when dealing externally with third parties. The law also envisages directors as being fiduciaries of the company.

6.5 Can an AI have a juridical personality?

Although one may think that the question of whether or not AI could be attributed with elements of a juridical personality concerns science fiction rather than fact and law, it is a question that has been considered by a number of scholars as being essential in determining the future of liability of acts performed by AI. The emergence of this theory’s importance was felt, for instance, by the International Bar Association, when in 2003 a mock trial was held in order to determine whether or not an AI machine had the right to demand an injunction to stop its owners from turning it off and dismembering its functions into a number of different computer-systems. The mock trial resulted in a jury vote of five to one, with one abstention, that believed that the machine was allowed to make an injunction to prevent its power supply from being terminated. However, the judge presiding the case overruled the jury’s decision as he claimed that it is up to the legislator to determine who has standing in the eyes of the law and not up to a jury or the Court. The concluding remarks held

---

234 Cremona F., Notes on Commercial Partnerships (Malta University Press, 1968) p. 113
235 Civil Code (n 2), Articles 1124A and 1124B
that “*the computer should be sustained, just as any other human would be, until its time or purpose comes to a natural end.*”

In his essay entitled “Legal Personhood for Artificial Intelligence”, Prof. Solum provides three arguments against the concept of granting legal personhood to Artificial Intelligence. These three arguments are as follows: “*The first objection is that only natural persons should be given the rights of constitutional personhood. The second objection, or family of objections, is that AIs lack some critical component of personhood for example, souls, consciousness, intentionality or feelings. The third objection is that AIs, as human creations, can never be more than human property.*” Whilst Prof. Solum is correct in stating that AI cannot be granted natural personhood, as this is only given to physical persons, his arguments against granting AI legal personhood are flawed. This is because the objections mentioned by him in his essay could just as well be applied to corporations which are not natural persons; they also lack souls, consciousness, intentionality and feelings and are indeed created by humans, yet they are not treated as a human’s property and are given a separate legal personality by legislators throughout the world.

Of course, when one is to discuss whether or not an AI is to be given personhood we are here referring to the application of the principles set out above that are applicable to juridical persons – it would be an impossible and a

---


hypocritical attempt to liken AI with the status and personhood of physical persons within the eyes of the law. However, since the law creates its own “artificial person” when attributing personhood to certain entities, it would not be a far-fetched theory to extend this juridical personality to AI which function independently from their human owners or programmers. In this context AI may therefore be considered to have a separate legal personality from the persons who created it originally.

6.5.1 AI as Slaves

As was mentioned in Chapter 1, the word robot derived from the Czech word for “slave”. In Roman law, slaves were considered to be things without a legal personality and thus incapable of, for instance, contracting marriage. However, in certain instances, slaves were also considered to be persons, so much so that they were subject to criminal law and were liable for delict which was attributed to their masters. Slaves could enter into contracts which created natural obligations “available after manumission not as a ground of action but as a defence, by, or against them.” Ulpiam held that “Slaves are bound by delict and remain bound after manumission. By contract they are not bound by civil law, but by natural law they are bound themselves and bind others to them.”

---

238 In F. Patrick Hubbard, ‘Do Androids Dream?: Personhood and Intelligent Artifacts’ [2010] 83(1) Temple Law Review <http://scholarcommons.sc.edu/cgi/viewcontent.cgi?article=1858&context=law_facpub> accessed 29 March 2016, Patrick Hubbard delves into whether it is possible to place artificial intelligence system in the same position as humans when one attributes personhood. However, it would be a legal fallacy to hold that an entity which is not human and not endowed with human consciousness and emotions to have the same legal status as a human being.


A number of slaves were considered to be "privileged" in their status. For instance, the *actio institoria* \(^{241}\) allowed the master to give his slave the power to carry out his business as a manager for that business. This endowed contracting third parties with the confidence necessary to carry out business with the principal's slave. Moreover, the master was also protected from transactions carried out by the slave in his name. This balance was struck by giving the slave what the Romans called a peculium, which was "the property held by a person (as a wife, child, slave) under the potestas, manus, or mancipium of another as his own private property either by the permission of the paterfamilias or master or by the rules of law but becoming with certain exceptions the property of the paterfamilias or master at his pleasure". \(^{242}\) Thus, the master's liability for compensation for actions carried out by his slave was limited to the amount of peculium given to the slave.

In addition, the master needed to inform the public that his slave could conduct business, or the prohibition for such conduct, in his name by giving public notice which detailed the transactions that could be undertaken by the slave.

This ancient Roman notion of *peculium* could be applied to AI \(^{243}\). It would be possible for claimant to demand compensation from a limited pool of resources which are available to the AI in question, and not go beyond that pool. This pool of resources could take the form of an insurance policy or a marked up licensing and registration fee. This would protect the producers, manufacturers, users

\(^{241}\) Lee (n 239) 360


\(^{243}\) A notion developed by U. Pagallo in (n 131)
and owners from liability for injuries caused by the AI, and make the AI itself
liable and capable of paying out any compensation due.

6.5.2 AI as a Corporation

When corporations are found to be liable under tort law or under contract law,
they are expected to provide remedies to the victim, either through the payment
of compensation or fulfilment of contractual obligations. If there are justifiable
reasons for the corporate veil to be lifted, the shareholders or members of the
company will be held liable jointly and severally with the company itself for the
fulfilment of those obligations.

The concept of juridical personality granted to corporations may form a good
basis for the creation of a juridical personality assigned to AI. The creation of
such a juridical personality will be granted to the AI upon registration of that AI,
much like in the case of limited liability companies. This Register will be held by
the same authority which would be responsible for handing out licenses for the
use of such technology to the owners of the machine. In this case, it would be
the owners of the machine who are placed in the same position as the
shareholders of the company, whereas the users of the machine will be placed
in a position akin to that of directors and corporate officials, in the sense that
they will be held liable if there is a breach of duty when utilising the AI.

In this manner, an AI will be able to sue and be sued in its own name. Of
course, it would need to have legal representation vested in either the owner or
the user of the AI, as is the case with legal representation vested in the
directors of companies. This would resolve the issue which was dealt with in the previous chapter, where artificial agents cannot be considered to be legal agents as they do not have a legal personality with the ability to have rights and obligations.

A difficulty that would arise if this were to be implemented would be the question of whether or not that AI has a right to acquire assets and liabilities. However, once legal personality is granted to the AI then this AI can also be legally viewed as an agent for certain purposes. Thus, all assets and liabilities incurred by it could be considered to be the assets and liabilities of its principal.

If the proposition of granting AIs legal personality similar to that of limited liability companies is unworkable, another solution that may be studied is that of granting the AI quasi-juridical personality, such as that given to sub-funds in SICAVs. The company which produces the AI will in its own capacity have juridical personality, as it would normally be a body corporate such as Google. In turn, Google has its own daughter companies such as the Google DeepMind\textsuperscript{244} with its own separate personality. Google DeepMind in turn may eventually start producing AI machines which will develop autonomously through the environments they are placed in and will make decisions independent of Google DeepMind. It appears in fact that the creation of a quasi-juridical personality similar to that of sub-funds in SICAVs would be one of the

\footnote{244 Emerging technology from the arxiv, ‘Google’s Secretive DeepMind Startup Unveils a “Neural Turing Machine”’ (MIT Technology Review, 29 October 2014) <https://www.technologyreview.com/s/532156/googles-secretive-deepmind-startup-unveils-a-neural-turing-machine/> accessed 15 May 2016 holds that Google DeepMind was founded in September 2010 as DeepMind Technologies and later acquired by Google in 2014. The company has created a neural network that learns how to play video games in a fashion similar to that of humans, as well as a neural network that may be able to access an external memory like a conventional Turing machine, resulting in a computer that mimics the short-term memory of the human brain.}
most plausible solutions to grant legal personality to AIs. This system would allow the consideration of the liabilities and assets acquired by the AI machine to belong solely to that AI machine, and not to Google DeepMind itself. Moreover, given that AI develop according to the environment they are placed in and the inputs they are given, an action brought against one of Google DeepMind’s AI machines could only be brought against that one machine and not against all of DeepMind’s machines.

6.6 Conclusion

In this Chapter an analysis was conducted of the possibilities for granting a level of personhood to AI. It is evident that for the foreseeable future, granting a type of legal personhood which is at par with that given to natural persons is a concept that is better left to the writers of science fiction. However, the possibility of attributing legal personality similar to the structure currently in place for corporations may be a valid theory to be applied. Corporations are non-humans who have been attributed personhood by virtue of the fact that they are formed of a group of natural persons all acting towards achieving a common goal.

The theory of applying juridical corporate personality to AI implies placing the owner, the user, the programmer and the producer of the AI on the same level as that held by directors and shareholders of the company.

The creation of a legal personhood for AI entities may solve a number of issues which have been outlined in this thesis. Such issues arise when attempting to
find a legal framework for conceptualising AI models that are completely autonomous from any human intervention and which are capable of learning from the environment they are placed in. Although the creation of such a legal personhood may make the victim’s life easier as he could simply sue the AI itself and not pay attention to who is behind that AI, the persons who can be held liable under this system are likely to be the same as those who could be held liable under tort law, product liability and contract law, i.e. the programmer, the manufacturer, the user or the owner. It would then be left up to the individual members who represent that AI to seek indemnity from other members should they feel that their contribution to the damage was negligible. This is a concept that is already found in Article 1050(1) of the CC.
7 Conclusion

As was outlined in this thesis, there are a number of possibilities already present within our law which could be utilised to compensate for damage caused by AI. At the same time the limitations in the existing remedies should lead us to seek novel solutions. Should AI be given legal personhood, similarly to the one given to companies? AI is capable of producing rights and obligations on behalf of humans through their actions; should it therefore have its behaviour regulated within the framework of agency law? Should the current provisions regulating tort liability apply in cases where a third party is injured through the actions of an AI? If so, how?

As discussed in Chapter 2, although one may initially come to the conclusion that the natural solution to deal with this kind of damage is to apply a strict product liability regime, this may not necessarily cater for all possible scenarios where damage is caused by the AI. Product liability may be applied in such cases if the damage caused is the result of a defect at manufacturing or production stage. If the damage is caused by an action of the AI that could not have been foreseen at its inception, product liability cannot be applied. Moreover, product liability only caters for damages caused to the consumer who has purchased the product, and not for damages caused to third parties.

Given that the most obvious course already has its pitfalls, other ways of allocating responsibility under existing law had to be explored. It appears that the approach that provides the best framework which could be applied to damages caused by AI is that of the application of tort law, given that it is
unlikely that a contractual relationship which governs liability for such damages would have existed at the time of the injury between the victim and the AI itself, or with the party held responsible for the harm inflicted by the AI.

Responsibility under tort law as envisaged by the Maltese Civil Code can be either direct or indirect. As regards direct responsibility, the persons who may be held liable for damages caused by AI are the programmer of the AI or the machine itself. The liability of the programmer falls under product liability regulations, which, as was illustrated above, may not be applicable to all instances. The direct responsibility of the machine itself can only be considered if the machine is given some level of legal personality, as was illustrated in Chapter 6.

When it comes to applying indirect liability for damages caused by AI, this thesis explored various avenues within Maltese law where vicarious liability is already applied, mainly: the liability of parents, the liability of employer, the liability of owners or users of animals and the liability placed on owners of buildings for damage inflicted by the collapse of that building. Nonetheless, the possibility of applying indirect liability as envisaged by the Civil Code is hindered by the judgment that was given in the case PCL Fenech v. Gatt\(^{245}\), which held that the Courts could only apply indirect liability exclusively to cases included in the Civil Code, and the Court does not have discretion to apply those instances of indirect liability by analogy in other scenarios. Given this stance, it would be difficult to assume that a matter dealing with injury caused by AI could be dealt

\(^{245}\) (n 117)
with through the use of modes of indirect liability, unless the Courts deliver a judgment reversing the stance adopted in PCL Fenech v. Gatt.

Should the conclusions of this judgment be reversed, it is the opinion of the author that the application by analogy of indirect liability of parents for damages caused by minors or persons of unsound mind or of the liability placed on owners of buildings offers helpful approaches for dealing with damages caused by AI. The reason why these forms of indirect liability are favoured is that whilst liability of employers has been interpreted by courts in a narrow manner by linking it to *culpa in eligendo* or *culpa in vigilando*, and the liability for owners of animals applied in a broader manner almost verging on objective liability, the liability of parents and that of owners of buildings fall somewhere in between.

Parents can only be held responsible for damages caused by their offspring if it can be proven that they did not act as a bonus paterfamilias. The parent is exonerated from liability if he can prove that all measures possible to prevent such damage from occurring were undertaken on his part. The owners or users of animals are always presumed to be liable for damage caused by the animal unless they prove that there was a fortuitous element which was beyond the owner's control, as discussed in Section 4.1.3. Meanwhile, the owners of buildings are liable if they were aware of the danger posed by the building owned. This form of indirect liability, if applied to damages caused by AI, would solve a number of issues that have been outlined in this thesis. Although there would be a *juris tantum* presumption that the owner of the AI could be held liable for injury caused by the AI, as he could have exercised some form of
control over its actions, the owner may rebut this presumption by proving that he had acted diligently or prudently, and that he had taken all the necessary precautions to prevent such damage from occurring.

Presently, it seems unlikely that the Courts would adopt such a philosophy, given that as indicated in the PCL Fenech v. Gatt\(^ {246} \) case, the approach adopted when interpreting tort law is a conservative one. Therefore a more realistic solution would be to lobby for legislative amendments. It is not being proposed that the legislator inserts a specific provision within our law that caters for damages caused by AI. The author proposes that a part-solution to the questions posed in this thesis is the updating of Maltese tort law to include the French notion of *responsabilite du fait des choses*, or liability for the custodian of a thing. The author refers to this as a part-solution because although such an approach would offer the victim the possibility to seek a remedy for damages from the custodian of the AI, the custodian may exonerate himself by claiming that he had taken all necessary precautions and the AI acted independently of his will due its ability to learn and adapt to its environment.

Another approach that was adopted in the course of this thesis was to explore the possible application of notions of contractual liability to damages caused by the AI, when a contractual relationship exists between the victim and the owner/user or the producer of the AI. As seen in *Mracek v. Bryn Mawr*, in order for the producer to be held liable for injury suffered by the plaintiff, there must

\(^{246} \text{(n 117)}\)
be proof through the presentation of expert evidence that the machine malfunctioned and caused damage.

Within the same context of contractual liability, the author explored the viability of the option of viewing the AI as an agent conducting business in the name of his principal. Whilst artificial agents carry out the same functions as agents or mandataries under civil law, these AAs cannot be deemed to be agents under the current legal regime, as that title is only reserved for legal persons who have rights and obligations. This brings us to the best solution as envisaged by the author to resolve the issue of who to sue in cases of damages caused by AI: the possibility of granting machines with a certain level of intelligence and independence a level of legal personhood.

The possibility of attributing a legal personality to AI, similar to the legal personality applied to companies is, it is argued, a viable and reasonable solution to ease the process of suing the correct person for injuries caused by AI. The application of personhood to AI places the owner, the user, the programmer and the producer of the AI at the same level as that of directors and shareholders of the company. While the creation of such a legal personhood may make the victim’s life easier since he or she could simply sue the AI itself, the persons who can be held liable under this system are likely to be the same as those who could be held liable under tort law, product liability and contract law, i.e. the programmer, the manufacturer, and the user or the owner. It would then be left up to the individual members who represent that AI to seek indemnity from other members if they feel aggrieved by the allocation of
responsibility as determined by the Court – a concept that is already found in Article 1051(1) of the CC. The application of a legal personhood to AI would also facilitate the Court’s work when a case concerning such damage emerges, as it could provide the victim with a clear and speedy remedy.
APPENDIX A

The rules of contract in the Maltese Civil Code

Definition of contract

960. A contract is an agreement or an accord between two or more persons by which an obligation is created, regulated, or dissolved.

Contract may be bilateral or unilateral,

961. (1) A contract is synallagmatic or bilateral when the contracting parties bind themselves mutually the one towards the other.

(2) It is unilateral when one or more persons bind themselves towards one or more other persons without there being any obligation on the part of the latter.

Rules governing contracts.

965. Contracts, whether they have a special denomination or not, shall be governed by the general rules contained in this Title saving such special rules as apply to certain contracts.

Requisites of contracts.

966. The following are the conditions essential to the validity of a contract:

(a) capacity of the parties to contract;

(b) the consent of the party who binds himself;
(c) a certain thing which constitutes the subject-matter of the contract;
(d) a lawful consideration.

Capacity of parties.

**967.** (1) All persons not being under a legal disability are capable of contracting.

(2) The disability of persons sentenced to any punishment whatsoever is abolished.

(3) The following persons are incapable of contracting, in the cases specified by law:
(a) minors;
(b) persons interdicted or incapacitated; and
(c) generally, all those to whom the law forbids certain contracts.

Obligations of seller.

**1378.** The seller has two principal obligations, namely, to deliver, and to warrant the thing sold.

Liability of seller for damages.

**1386.** In all cases, the seller is liable for damages if the buyer has sustained any loss from the non-delivery of the thing at the time agreed upon.

Warranty.
1408. The warranty which the seller owes to the buyer is in respect of the quiet possession of the thing sold and of any latent defect therein.

Warranty in respect of latent defects.

1424. The seller is bound to warrant the thing sold against any latent defects which render it unfit for the use for which it is intended, or which diminish its value to such an extent that the buyer would not have bought it or would have tendered a smaller price, if he had been aware of them.

Seller not liable for apparent defects.

1425. The seller is not answerable for any apparent defects which the buyer might have discovered for himself.

Seller answerable for latent defects.

1426. Nevertheless, he is answerable for latent defects, even though they were not known to him, unless he has stipulated that he shall not in any such case be bound to any warranty.

Actio redhibitoria and actio aestimatoria.

1427. In the cases referred to in articles 1424 and 1426, the buyer may elect either, by instituting the actio redhibitoria, to restore the thing and have the price repaid to him, or, by instituting the actio aestimatoria, to retain the thing and have a part of the price repaid to him which shall be determined by the court.
Where defect is in one of two or more things sold together.

1428. (1) Where two or more things are sold together, so that one would not have been sold or bought without the other, and one of such things has a defect which gives rise to the actio redhibitoria or aestimatoria, the buyer may not institute the actio redhibitoria but in respect of all the things sold, although a price was specified in respect of each.

(2) Where, however, the things sold together are independent of one another, the said action may not be instituted but in respect of the defective thing, although all the things had been sold for a single price; and in such case the seller is bound to repay the price of such thing according to a valuation to be made on the basis of the total price agreed upon.

Where defects were known or not to the seller.

1429. (1) If the defects of the thing sold were known to the seller, he is not only bound to repay the price received by him but he is also liable in damages towards the buyer.

(2) If the defects were not known to the seller, he is only bound to repay the price and to refund to the buyer the expenses incurred in connection with the sale.

Where defective thing perishes.
1430. (1) If the defective thing perishes in consequence of its defects, the loss is borne by the seller, who shall be bound to repay the price to the buyer and to indemnify him as provided in the last preceding article. (2) If the thing perishes by a fortuitous event, the loss is borne by the buyer.

Limitation of action.

1431. (1) The actio redhibitoria and the actio aestimatoria shall, in regard to immovables, be barred by the lapse of one year as from the day of the contract, and, in regard to movables, by the lapse of six months as from the day of the delivery of the thing sold.

(2) Where, however, it was not possible for the buyer to discover the latent defect of the thing, the said periods of limitation shall run only from the day on which it was possible for him to discover such defect.

(3) The said periods of limitation shall run as provided in subarticle (2) of article 1407.
APPENDIX B

The rules of mandate in the Maltese Civil Code

Definition of contract of mandate.

1856. (1) Mandate or procuration is a contract whereby a person gives to another the power to do something for him.

(2) The contract is not perfected until the mandatary has accepted the mandate.

Object of mandate.

1857. (1) Every mandate must have for its object something lawful which the mandator might have done himself.

(2) Subject to any other special provision of the law, a mandate can be granted by a public deed, by a private writing, by letter, or verbally, or even tacitly.

(3) An irrevocable mandate granted by way of security as specified in article 1887(1) shall be granted in writing on pain of nullity.

Acceptance by mandatary.

1858. The acceptance on the part of the mandatary may also be tacit, and may be inferred from acts.

Powers of mandatory.
1864. A mandatary cannot do anything beyond the limits of the mandate.

Acts which the mandatary may perform.

1865. (1) For the carrying out of the mandate, the mandatary may institute legal proceedings; make and prosecute appeals; make proof by reference to the oath of his adversary; take the oath in litem or the suppletory oath; enforce judgments both on movable and immovable property; make demand for the issue of precautionary acts including those for the issue of which an application or declaration on oath is required; make demand for the personal arrest of the debtor of the mandator, where such demand is competent; and do any other thing which the mandator might do personally, notwithstanding that such powers have not been expressly given in the mandate.

(2) The mandatary may also, in virtue of the said powers, be a defendant on behalf of the mandator, in any law-suit concerning the matter included in the mandate.

When mandatary may not sue or be sued.

1866. A mandatary, however, may not sue or be sued, on behalf of the mandator, although the latter shall have given him authority to do so, when the mandator himself is not absent from the Island in which the action is to be tried, saving the provisions of article 786 of the Code of Organization and Civil Procedure: provided that a mandatary under an
irrevocable mandate granted by way of security may sue on behalf of the mandator irrespective of this provision in order to protect or enforce the interests secured by the mandate.

Other powers of mandatary.

1867. (1) The express power to compromise does not include the power to submit to arbitration or vice versa.

(2) The power to receive includes the power to give acquittance.

(3) The power to sell includes the power to receive the price.

General powers.

1868. Where a person has been employed to do something in the ordinary course of his profession or calling, without any express limitation of power, such person shall be presumed to have been given power to do all that which he thinks to be necessary for the carrying out of the mandate, and which, according to the nature of the profession or calling aforesaid, may be done by him.

Minors may be mandataries.

1869. Minors may be appointed mandataries; but in any such case the mandator cannot maintain an action against the mandatary except in accordance with the general rules relating to the obligations of minors.
Power of mandator.

1870. (1) The mandator can, for the execution of a contract, act directly against the person with whom the mandatary in his capacity as such has contracted.

(2) The powers of the mandator in relation to the subject matter of the irrevocable mandate by way of security may be suspended by express agreement for the duration of the mandate.

(3) Such mandates may be registered in a public register. In this article "public register" means:

(a) where the subject matter of the mandate is a ship or rights related or connected therewith, the Register of Maltese Ships and by means of an annotation;

(b) where the subject matter of the mandate is an aircraft or an aircraft engine or rights related or connected therewith, the National Aircraft Register and by means of an annotation; and

(c) in all other cases, the Public Registry by means of a note, and in such case it shall have effect in relation to third parties and any exercise of any such powers by the mandatary as are suspended shall not have any effect except when done with the written consent of the mandatory.

Where mandatary acts in his own name.
1871. (1) When the mandatary has acted in his own name, the mandator cannot maintain an action against those with whom the mandatary has contracted, nor the latter against the mandator.

(2) In any such case, however, the mandatary is directly bound towards the person with whom he has contracted as if the matter were his own.

Duties of mandatary.

1873. (1) A mandatary is bound to carry out the mandate so long as he is vested therewith, and in case of non-performance he is answerable for damages and interest.

(2) He is also bound to conclude any matter, which he may have commenced before the death of the mandator, if delay might be prejudicial.

Liability of mandatary.

1874. (1) A mandatary is answerable not only for fraud, but also for negligence in carrying out the mandate.

(2) Nevertheless, such liability in respect of negligence is enforced less rigorously against a person whose mandate is gratuitous than against one receiving a remuneration.

Mandatary is not personally liable towards party contracting with him as such.
1879. A mandatary who has given to the party with whom he has contracted in such capacity sufficient information as to his powers, is not liable for any warranty in respect of what he has done beyond such powers, unless he has personally bound himself thereto.

Liability of mandator

1880. (1) A mandator is bound to carry out the obligations contracted by the mandatary in accordance with the powers which he has given him.

(2) He is not liable for what the mandatary has done beyond such powers, unless he has expressly or tacitly ratified it.
APPENDIX C

List of Unfair Terms as found in the First Schedule of the Consumer Affairs Act

Commercial Practices which are *ipso jure* unfair

Misleading commercial practices

1. Claiming to be a signatory to a code of conduct when the trader is not.

2. Displaying a trust mark, quality mark or equivalent without having obtained the necessary authorisation.

3. Claiming that a code of conduct has an endorsement from a public or other body which it does not have.

4. Claiming that a trader, including his/her commercial practices, or a product has been approved, endorsed or authorised by a public or private body when he/she/it has not, or making such a claim without complying with the terms of the approval, endorsement or authorisation.

5. Making an invitation to purchase products at a specified price without disclosing the existence of any reasonable grounds the trader may have for believing that he/she will not be able to offer for supply or to procure another trader to supply, those products or equivalent products at that price for a period that is, and in quantities that are, reasonable having regard to the product, the scale of advertising of the product and the price offered (bait advertising).
6. Making an invitation to purchase products at a specified price and then:
(a) refusing to show the advertised item to consumers; or
(b) refusing to take orders for it or deliver it within a reasonable time; or
(c) demonstrating a defective sample of it, with the intention of promoting a different product (bait and switch).

7. Falsely stating that a product will only be available for a very limited time, or that it will only be available on particular terms for a very limited time, in order to elicit an immediate decision and deprive consumers of sufficient opportunity or time to make an informed choice.

8. Undertaking to provide after-sales service to consumers with whom the trader has communicated prior to a transaction in a language which is not an official language of the Member State where the trader is located and then making such service available only in another language without clearly disclosing this to the consumer before the consumer is committed to the transaction.

9. Stating or otherwise creating the impression that a product can legally be sold when it cannot.

10. Presenting rights given to consumers by law as a distinctive feature of the trader’s offer.

11. Without prejudice to the provisions of the Broadcasting Act (Cap. 350) and any regulations made thereunder, using editorial content in the media to
promote a product where a trader has paid for the promotion without making that clear in the content or by images or sounds clearly identifiable by the consumer (advertorial).

12. Making a materially inaccurate claim concerning the nature and extent of the risk to the personal safety or security of the consumer or his family if the consumer does not purchase the product.

13. Promoting a product similar to a product made by a particular manufacturer in such a manner as deliberately to mislead the consumer into believing that the product is made by that same manufacturer when it is not.

14. Establishing, operating or promoting a pyramid promotional scheme where a consumer gives consideration for the opportunity to receive compensation that is derived primarily from the introduction of other consumers into the scheme rather than from the sale or consumption of products.

15. Claiming that the trader is about to cease trading or move premises when he is not.

16. Claiming that products are able to facilitate winning in games of chance.

17. Falsely claiming that a product is able to cure illnesses, dysfunction or malformations.
18. Passing on materially inaccurate information on market conditions or on the possibility of finding the product, with the intention of inducing the consumer to acquire the product at conditions less favourable than normal market conditions.

19. Claiming in a commercial practice to offer a competition or prize promotion without awarding the prizes described or a reasonable equivalent.

20. Describing a product as "gratis", "free", "without charge" or similar if the consumer has to pay anything other than the unavoidable cost of responding to the commercial practice and collecting or paying for delivery of the item.

21. Including in marketing material an invoice or similar document seeking payment which gives the consumer the impression that he has already ordered the marketed product when he has not.

22. Falsely claiming or creating the impression that the trader is not acting for purposes relating to his trade, business, craft or profession, or falsely representing oneself as a consumer.

23. Creating the false impression that after-sales service in relation to a product is available in a Member State other than the one in which the product is sold.

Aggressive commercial practices
24. Creating the impression that the consumer cannot leave the premises until a contract is formed.

25. Conducting personal visits to the consumer’s home ignoring the consumer’s request to leave or not to return except in circumstances and to the extent justified, under national law, to enforce a contractual obligation.

26. Making persistent and unwanted solicitations by telephone, fax, e-mail or other remote media except in circumstances and to the extent justified under national law to enforce a contractual obligation. This is without prejudice to the Data Protection Act (Cap. 440) and the Processing of Personal Data (Electronic Communications Sector) Regulations (S.L. 440.01).

27. Requiring a consumer who wishes to claim on an insurance policy to produce documents which could not reasonably be considered relevant in determining whether the claim was valid, or failing systematically to respond to pertinent correspondence, in order to dissuade a consumer from exercising his contractual rights.

28. Including in an advertisement a direct exhortation to children to buy advertised products or persuade their parents or other adults to buy advertised products for them. This provision is without prejudice to rule 6 of the Broadcasting Code for the Protection of Minors (S.L. 350.05).
29. Demanding immediate or deferred payment for, or the return or safekeeping of, products supplied by the trader, but not solicited by the consumer (inertia selling).

30. Explicitly informing a consumer that if he does not buy the product or service, the trader’s job or livelihood will be in jeopardy.

31. Creating the false impression that the consumer has already won, will win, or will on doing a particular act win, a prize or other equivalent benefit, when in fact either: - there is no prize or other equivalent benefit, or - taking any action in relation to claiming the prize or other equivalent benefit is subject to the consumer paying money or incurring a cost.
APPENDIX D

Selected provisions of the Constitution of Malta

Protection of freedom of expression.

41. (1) Except with his own consent or by way of parental discipline, no person shall be hindered in the enjoyment of his freedom of expression, including freedom to hold opinions without interference, freedom to receive ideas and information without interference, freedom to communicate ideas and information without interference (whether the communication be to the public generally or to any person or class of persons and freedom from interference with his correspondence.

(2) Nothing contained in or done under the authority of any law shall be held to be inconsistent with or in contravention of subarticle (1) of this article to the extent that the law in question makes provision –
(a) that is reasonably required –
(i) in the interests of defence, public safety, public order, public morality or decency, or public health; or
(ii) for the purpose of protecting the reputations, rights and freedoms of other persons, or the private lives of persons concerned in legal proceedings, preventing the disclosure of information received in confidence, maintaining the authority and independence of the courts, protecting the privileges of Parliament, or regulating telephony, telegraphy, posts, wireless broadcasting, television or other means of communication, public exhibitions or public entertainments; or
(b) that imposes restrictions upon public officers, and except so far as that provision or, as the case may be, the thing done under the authority thereof is shown not to be reasonably justifiable in a democratic society.

(3) Anyone who is resident in Malta may edit or print a newspaper or journal published daily or periodically:
Provided that provision may be made by law –
(a) prohibiting or restricting the editing or printing of any such newspaper or journal by persons under twentyone years of age; and
(b) requiring any person who is the editor or printer of any such newspaper or journal to inform the prescribed authority to that effect and of his age and to keep the prescribed authority informed of his place of residence.

(4) Where the police seize any edition of a newspaper as being the means whereby a criminal offence has been committed they shall within twenty-four hours of the seizure bring the seizure to the notice of the competent court and if the court is not satisfied that there is a prima facie case of such offence, that edition shall be returned to the person from whom it was seized.

(5) No person shall be deprived of his citizenship under any provisions made under article 30(1) (b) of this Constitution or of his juridical capacity by reason only of his political opinions.
Protection of freedom of assembly and association.

42. (1) Except with his own consent or by way of parental discipline no person shall be hindered in the enjoyment of his freedom of peaceful assembly and association, that is to say, his right peacefully to assemble freely and associate with other persons and in particular to form or belong to trade or other unions or associations for the protection of his interests.

(2) Nothing contained in or done under the authority of any law shall be held to be inconsistent with or in contravention of this article to the extent that the law in question makes provision –

(a) that is reasonably required –

(i) in the interests of defence, public safety, public order, public morality or decency, or public health; or

(ii) for the purpose of protecting the rights or freedoms of other persons; or

(b) that imposes restrictions upon public officers, and except so far as that provision or, as the case may be, the thing done under the authority thereof is shown not to be reasonably justifiable in a democratic society.

(3) For the purposes of this article, any provision in any law prohibiting the holding of public meetings or demonstrations in any one or more
particular cities, towns, suburbs or villages shall be held to be a provision which is not reasonably justifiable in a democratic society.
APPENDIX E

The rules of tort in the Maltese Civil Code

Fortuitous damage

1029. Any damage which is produced by a fortuitous event, or in consequence of an irresistible force, shall, in the absence of an express provision of the law to the contrary, be borne by the party on whose person or property such damage occurs.

Proper use of one’s right.

1030. Any person who makes use, within the proper limits, of a right competent to him, shall not be liable for any damage which may result therefrom.

Liability for damage caused through one’s fault.

1031. Every person, however, shall be liable for the damage which occurs through his fault.

When a person is deemed to be in fault.

1032. (1) A person shall be deemed to be in fault if, in his own acts, he does not use the prudence, diligence, and attention of a bonus paterfamilias.
(2) No person shall, in the absence of an express provision of the law, be liable for any damage caused by want of prudence, diligence, or attention in a higher degree.

Culpable negligence.

1033. Any person who, with or without intent to injure, voluntarily or through negligence, imprudence, or want of attention, is guilty of any act or omission constituting a breach of the duty imposed by law, shall be liable for any damage resulting therefrom.

Liability of person having charge of minor or person of unsound mind.

1034. Any person having the charge of a minor or of a person of unsound mind shall be liable for any damage caused by such minor or person of unsound mind, if he fails to exercise the care of a bonus paterfamilias in order to prevent the act.

Damage caused by children under nine years, etc.

1035. Persons of unsound mind, children under nine years of age, and , unless it is proved that they have acted with a mischievous discretion, children who have not attained the age of fourteen years, shall not be bound to make good the damage caused by them; saving, where competent, any action of the party injured against such persons as may be liable for such damage, under the provisions of the last preceding article.
Power of court to order damage to be made good out of property of minor, etc.

1036. Nevertheless, where the party injured cannot recover damages from such other persons, because they are not liable or because they have no means, and the said party has not, by his own negligence, want of attention, or imprudence, given occasion to the damage, the court may, having regard to the circumstances of the case, and particularly to the means of the party causing the damage and of the injured party, order the damage to be made good, wholly or in part, out of the property of the minor or of the person of unsound mind referred to in the last preceding article.

Employment of incompetent person.

1037. Where a person for any work or service whatsoever employs another person who is incompetent, or whom he has not reasonable grounds to consider competent, he shall be liable for any damage which such other person may, through incompetence in the performance of such work or service, cause to others.

Persons undertaking work without necessary skill.

1038. Any person who without the necessary skill undertakes any work or service shall be liable for any damage which, through his unskilfulness, he may cause to others.
Liability of hotelkeepers.

1039. (1) A hotel-keeper shall be liable up to an amount not exceeding one hundred and seventy-four euro and seventy cents (174.70) for any damage to or destruction or loss of property brought to the hotel by any guest.

(2) The liability of a hotel-keeper shall be unlimited -

(a) if the property has been deposited with him; or

(b) if he has refused to receive the deposit of property which he is bound under the provision of the next following sub-article to receive for safe custody; or

(c) in any case in which the damage to, or destruction or loss of, property has been caused, voluntarily or through negligence or lack of skill, even in a slight degree, by him or by a person in his employment or by any person for whose actions he is responsible.

(3) A hotel-keeper shall be bound to receive, for safe custody securities, money and valuable articles except dangerous articles and such articles as having regard to the size or standard of the hotel are cumbersome or have an excessive value.

(4) A hotel-keeper shall have the right to require that any articles delivered to him for safe custody shall be in a fastened or sealed container.
(5) The provisions of sub-articles (1) and (2) of this article shall not apply if the guest, after discovering the damage, destruction or loss, does not inform the hotel-keeper without undue delay, or if the damage to, destruction or loss of, property is due -

(a) to a fortuitous event or to irresistible force; or

(b) to a reason inherent in the nature of the property damaged, destroyed or lost; or

(c) to an act or omission of the guest by whom it was brought into the hotel, or of any person, other than the hotel-keeper, to whom such guest may have entrusted the said property or of any person in the employment of such guest or accompanying him or visiting him.

(6) Any tacit or express agreement between a hotel-keeper and a guest entered into before any damage to, destruction or loss of, property has occurred and purporting to exclude, reduce or make less onerous the hotel-keeper’s liability as established in this article shall be null and void:

Provided that, in the cases referred to in paragraphs (a) and (c) of sub-article (2) of this article where the damage to, or destruction or loss of, property has not been caused by a person mentioned in the said paragraph (c) voluntarily or through gross negligence, any agreement signed at any time by the guest whereby the hotelkeeper’s
liability is reduced to an amount being not less than one hundred and seventy-four euro and seventy cents (174.70) shall be valid.

(7) In this article and in article 2009 of this Code "guest" means a person who stays at the hotel and has sleeping accommodation put at his disposal therein, but is not an employee in the hotel.

(8) In this article, any reference to a "hotel-keeper", except in so far as the liabilities thereby established are imposed on the hotel-keeper, shall be construed as including reference to the person in charge of the hotel or of the reception of guests in the hotel, and any reference to "loss" shall be deemed to include by theft.

Liability of owner of animal.

1040. The owner of an animal, or any person using an animal during such time as such person is using it, shall be liable for any damage caused by it, whether the animal was under his charge or had strayed or escaped.

Liability of owner of building.

1041. The owner of a building shall be liable for any damage which may be caused by its fall, if such fall is due to want of repairs, or to a defect in its construction, provided the owner was aware of such defect or had reasonable grounds to believe that it existed.
Rule as to liability of occupier of building in case of damage caused by the fall of a thing.

1042. Where any damage is caused to any person by the fall of a thing suspended or placed in a dangerous position, or by a thing or matter thrown or poured from any building, the occupier of such building, provided he himself has not committed the act, and has not in any way contributed thereto, shall not be liable except in so far as the provisions contained in this Title relating to the liability of a person for damage caused by another, are applicable to him.

Intoxication.

1043. An action for damages shall lie even where the party causing the damage was at the time in a state of intoxication.

Aiders or abettors.

1044. Where damage has been unjustly caused, any person who has wilfully contributed thereto with advice, threats, or commands, shall also be liable.

Right of relief against party causing damage.

1048. Where a person is liable for the damage caused by another person, and discharges his liability, he may not seek relief against the party causing the damage, except where the latter is also answerable for such damage. Joint and several liability where damage is caused maliciously.
Joint and several liability where damage is caused maliciously

1049. (1) Where two or more persons have maliciously caused any damage, their liability to make good the damage shall be a joint and several liability.

(2) Where some of them have acted with malice, and others without malice, the former shall be jointly and severally liable, and each of the latter shall only be liable for such part of the damage as he may have caused.

Where part of damage caused by each of several persons cannot be ascertained.

1050. (1) Where the part of the damage which each has caused cannot be ascertained, the injured party may claim that the whole damage be made good by any one of the persons concerned, even though all or some of them have acted without malice, saving the right of the defendant to seek relief from the other or the others.

(2) In such case, it shall be lawful for the defendant to demand that all the persons causing the damage be joined in the proceedings in the manner and for the purposes referred to in article 962 of the Code of Organization and Civil Procedure, and the court may apportion among them the sum fixed by way of damages, in equal or unequal shares,
according to circumstances; saving always the right of the injured party to claim the whole sum from any one of the persons concerned who in regard to him shall be all condemned jointly and severally.

Contribution to damage by party injured.

1051. If the party injured has by his imprudence, negligence or want of attention contributed or given occasion to the damage, the court, in assessing the amount of damages payable to him, shall determine, in its discretion, the proportion in which he has so contributed or given occasion to the damage which he has suffered, and the amount of damages payable to him by such other persons as may have maliciously or involuntarily contributed to such damage, shall be reduced accordingly.
Bibliography

Books
Anderson J.A., An Introduction to Neural Networks (1st edn, MIT Press 1995)

Asimov I., I, Robot (1st, Gnome Press, New York City 1950)

Beal J. P. and others, New Commentary on the Code of Canon Law (1st edn, Paulist Press 2000)

Capek K., RUR (1st edn, Gateway 2013)


Carauna Galizia V., Notes on the Contract of Sale, (GhSL Publications)


Chopra S. and White L. F., A Legal Theory for Autonomous Artificial Agents (1st edn, University of Michigan Press 2011)

Cremona F., Notes on Commercial Partnerships (Malta University Press, 1968)

De Ruggiero Roberto, Istituzioni di diritto civile, (7th edn, Messina-Milano, Principato 1934)


Ganado J.M., 'Notes on Prolegomena' (University of Malta, 1965)

Geri V., Responsabilita` Civile per danni da cose ed animali, (2nd edn, Giuffre, 1967)

Giorgi G., Teoria delle obbligazioni nel diritto moderno italiano : esposta con la scorta della dottrina e della giurisprudenza (7th edn, Fratelli Cammelli 1907)

Giorgi G., Teoria delle Obligazioni, Vol. V (Fratelli Cammelli, Firenze 1909)


Knight F. H., *Risk, Uncertainty and Profit* (Reprint of 1st edn, Sentry Press 1957)


Mazeaud, *Lecons de Droit Civil* (Tome II/ Premier Volume) (9th ed. 1998),


Salmond J, *Jurisprudence or The Theory of the Law* (1st edn, Stevens & Haynes 1902)

Tamburrino G., ‘Persone Giuridiche e Associazioni non riconosciute’ (1st edn, UTET 1980)


Von Jhering R , *Geist des römischen Rechts auf den verschiedenen Stufen seiner Entwicklung* (1st edn, Breitkopf & Hartel 1865)


**Academic Articles**


Camilleri Xuereb K., *Negligence Defined, Negligence Refined – Part II.* [2007] 17 Law & Practice Malta Chamber of Advocates, 6 - 16


Rothblatt M., ‘Biocyberethics: should we stop a company from unplugging an intelligent computer?’ (Kurzweil Accelerating Intelligence, 28 September 2003) <http://www.kurzweilai.net/biocyberethics-should-we-stop-a-company-from-unplugging-an-intelligent-computer> accessed 29 March 2016


Villasenor J., ‘Products Liability and Driverless Cars: Issues and Guiding Principles for Legislation’ (Brookings, 12 April 2014)


Theses


Bezzina Samuel, The evolution of ‘responsabilité du fait des choses’ in French tort law : an overview and comparison with Maltese tort law on the indirect liability for things (LLD thesis, University of Malta 2009)


Borg Daniela, Objective liability: does it have a place within our legal system? (LL.D thesis, University of Malta 2007)


Calleja Mikiel, Environmental liability: piercing the corporate veil and its implications, (LLD Thesis, University of Malta 2013)


Cassar Lara, The Special Regulation Of Commercial Obligations – An Anachronism Or A Need?, (LLD Thesis, University of Malta 2014)


**Other Material**

Anderson D., 'Searle and the Chinese Room Argument' (Consortium on Cognitive Science Instruction, 2006)  

Autonomous Vehicles Team, 'Autonomous Vehicle Law Report and Recommendations to the ULC' (University of Washington, School of Law, 2014)  


House of Representatives Debate, 23 January 2007, Sitting No. 485


Korosec K., ‘Volvo CEO: We will accept all liability when our cars are in autonomous mode’ (Fortune, 7 October 2015) <http://fortune.com/2015/10/07/volvo-liability-self-driving-cars/> accessed 2 May 2016


Ohio State University, 'Want Responsible Robotics? Start with Responsible Humans' (Communications of the ACM, 30 July 2009)
Philips, A. (2014) 'Google Just Unveiled the First Fully Functional Driverless Car' (Think Progress)


Speed Barbara, 'Would you want a robot to help you with the washing up?' (The Australian Financial Review, 11 January 2016)

Urmson C., 'Letter to the Director of the Google Self-Driving Car Project' (National Highway Traffic Safety Administration, 4 February 2016)

Vella O., 'Unfair contract terms' (Times of Malta, 19 January 2014)

Woolf N., ‘Tesla fatal autopilot crash: family may have grounds to sue, legal experts say’ (The Guardian, 6 July 2016)


**Online Sources for Judgments and Legislation**

European Union Law
<http://eur-lex.europa.eu/homepage.html> accessed on various dates

European Union Judgments

French Civil Code
<http://lexinter.net/ENGLISH/civil_code.htm> accessed 30 April 2016

Italian Civil Code
Laws of Malta and Judgments given by the Courts of Justice of Malta and Gozo
<www.justiceservices.gov.mt> accessed on various dates

Roman Law

UK Law
< http://www.legislation.gov.uk/> accessed on various dates

UK Judgments
< https://www.judiciary.gov.uk/judgments/> accessed on various dates

US Judgments
<http://www.gpo.gov> accessed on various dates