



Ethics in mathematics

Dr Maurice Chiodo
University of Cambridge




MALTA EU2017

MSCA 2017 'Mobility takes research further'
11-12 May 2017, Esplora, Kalkara, Malta

Consider a knife, and a spoon.
Which is better?
The knife can do more, but
can be more harmful.
The spoon is not as harmful,
but not nearly as useful.
So which is better?



MALTAEU2017



Now compare a knife with
mathematics.
Mathematics is much more
useful than a knife.
Thus, it can be more harmful.



MALTAEU2017



So why is this not addressed?

What damage can mathematicians do?



MALTAEU2017

Case study: The Global Financial Crisis

Collateralised debt obligations.
Brought the market to its knees.
Mathematicians took the money
from your wallet.



MALTAEU2017

Case study: Volkswagen emissions scandal

Inserted testing cheat devices.
Diesel exhaust is a carcinogen.
Mathematicians took the air from
your lungs.



MALTAEU2017

Case study: Mass surveillance

Tools to surveille and break encryption.
Snowden: we are all being watched.
Mathematicians took the thoughts
from your mind.



MALTAEU2017

Case study: Metadata processing

Analyse and predict network activity.
“We kill people based on metadata”.
Mathematicians took the life from
your body.



MALTAEU2017

Case study: US and Brexit elections

Cambridge Analytica assisted in both.
Targeted adverts to individuals.
Mathematicians took the vote from
your hand.



MALTAEU2017

And one of you member states.

Mathematicians also control:
Your shopping (Amazon).
Your mortgage approval.
Your job prospects (Blackdot).
Your jail sentence (Northpointe).
Your air travel (US airways).



MALTAEU2017



Who has met a mathematician?

If a mathematical process makes a moral decision, then who do we hold morally accountable?



MALTAEU2017

Mathematicians see their discipline as “pure” and amoral. Mathematicians are unwilling to acknowledge the harm they can do. Their desire to solve mathematical problems is the dominant decision-making factor in their lives.



MALTAEU2017

Mathematicians are having a larger impact on society.
No university gives ethical training to mathematicians.
Cambridge: "No-one else is doing it, so why should we?"




MALTAEU2017

The physicist learned how harmful their work could be (Manhattan project).
The mathematicians have had no such “hard” lesson. Yet.



MALTAEU2017



My work here is not to contribute
to a better society;
It is to prevent the rapid
degeneration of our existing
society.



MALTAEU2017