Luddites or Lemmings? Reflections on the relationship between therapy and information technology

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Luddites, Lemmings or Liberators?

The relationship between psychological therapy & technology

A rambling exploration
Overview

• Where I’m coming from:
  • Psychology & me
  • Technology & me

• What I found....
  • Technology & Us
    • Medicine & Technology
    • A couple of philosophical considerations
    • Psychological therapy & Technology

• What I think it means...
  • Some questions for us to grapple with....

• A (whimsical) taxonomy of psychologists’ ways of relating to computerised therapies

• Three caveats:
  • Liberal use of anecdote/personal experience
  • Random Thought Generator (app)
  • Beta version of this presentation
Where I’m coming from: Technology & Me...

• Use of technology in my career:
  • 1980s: Uni of Edinburgh – DoS
    • Early use of spam
  • 1990s: Training: Relaxation Tapes
    • Gulf War anecdote
  • 2000s: NZ Psychosis Work
    • Use of recordings (check perceptions)
  • 2010s: Lancashire EIS:
    • IAPT SMI – sessional measures, use of tablets
    • Big White Wall (and other business approaches)

• More an early adopter than a luddite
  • (although luddites weren’t all bad)

• Relatively comfortable with IT; limited use in clinical work
Where I’m coming from: Clinical Psychology & Me

• Ambivalent relationship from the outset
  • Concern re ethical, philosophical and socio-political aspects of psychology

• Interest in psychosis:
  • ‘In psychotic reality we find an abundance of content representing the fundamental problems of philosophy’
    Jaspers (1963: 309)

• I propose that
  • in the relationship between psychological therapy and technology, we find dynamics reflecting (some of) the fundamental problems of philosophy and psychology

• Use of IT in therapy generates ethical & philosophical questions
  • Many of which are often overlooked
Where I’m coming from: Clinical Psychology & Me

• David Smail:
  • Psychology becoming homogenised & sterilised
    • As an aside, compared psychotherapy to prostitution
  • Clinical psychology is in a unique and deeply responsible position of bearing witness to the ‘pink underbelly’ of our times
    • Responsibility to give voice to this (Foucault), not simply ‘treat’ it

• My contention:
  • In the headlong rush for scientific respectability (& status, $£$£) clinical psychology has neglected philosophical and socio-political implications of our work and ultimately this is to our detriment
    • Evidenced in (largely) uncritically embracing manualisation, IAPT, etc.
'Manualisation' is to therapy what painting-by-numbers is to art. #psychotherapy #psychology #mentalhealth

1:46 PM - 15 Jun 2015

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Jim Geekie @JimGeekie · 1 Jul 2015

To travel is to explore - and to experience - different ways of being. Ditto psychotherapy. #psychotherapy #travel
What I have found
1. Anything that is in the world when you’re born is normal and ordinary and is just a natural part of the way the world works.

2. Anything that’s invented between when you’re fifteen and thirty-five is new and exciting and revolutionary and you can probably get a career in it.

3. Anything invented after you’re thirty-five is against the natural order of things.

- Douglas Adams, The Salmon of Doubt
Humans and technology; some important events

• Deep blue vs Kasparov
  • 1996 Kasparov won
  • 1997 Deep blue won

• March 2016. AlphaGo (DeepMind), defeated Lee Sedol, world champion at the ancient Chinese game of Go
  • Players must win by experience, judgement and intuition (gut instinct)
  • Deep learning

• 2018 – trial of debating software
  • Project Debater (IBM); won 1 lost 1 debate.
  • Debater handled some complexities of human interaction
    • "Argumentation is one of the fundamental things that defines what it is to be human"
    • Professor Chris Reed University of Dundee
    • Technology/medicine relationship evidenced at V&A
Medicine & Technology

• St George’s Hospital Medical lead (2016)
  • Predicting the need for doctors to develop relationship skills
    • Closing the door after the horse has bolted?
    • Psychology placing less emphasis on relationship factors?

• General Practice:
  • Babylon (IT company). Argues their app outperforms GPs in diagnosing common and complex presentations
    • GP score: 72%
    • Babylon: 82%

• Eye Disease
  • Moorfields eye hospital & Google Deep Mind; diagnosed eye disease 94.5% (comparable to expert)

• Heart Disease
  • AI diagnostics system more accurate than doctors at diagnosing heart disease, at least 80 percent of the time.
Medicine & Technology

• Blood infections:
  • Harvard University “smart” microscope: detects potentially lethal blood infections:

• Quick clinical judgements:
  • AI outperforms physicians in diagnostic challenges requiring a quick judgment call,
    • For example, determining if a lesion is cancerous
  • IBM’s Watson
    • Insights from the genetic data of tumor cells (review & recommend treatment)
    • human experts: 160 hours
    • Watson: 10 minutes to deliver the same kind of actionable advice

• Human Diagnosis Project:
  • combines machine learning with doctors’ real-life experience
    • input from 7,500 doctors; 500 medical institutions; more than 80 countries
    • developing system that anyone — patient, doctor, organization, device developer, or researcher — can access in order to make more informed clinical decisions.
Philosophical considerations.

- Thomas Nagel
  - What it feels like to be a bat (1974)

- Polayni – all knowledge is based on personal knowing. Centrality of lived experience.

Therapy and technology

• NICE – Digital Therapy:

  • NHS England is working with NICE to support a new digitally enabled therapy assessment programme, where up to 14 digital therapy products will be assessed for use in NHS Improving Access to Psychological Therapies (IAPT) services by 2020.

  • Digitally enabled therapy is psychological therapy that is provided online or through mobile applications, with the support of a therapist.

• Evidence:
  • these therapies can achieve comparable outcomes to face-to-face therapy, when the same therapy content is delivered in an online format
  • many people prefer to access therapy in this way
Therapy and technology: History: Chatterbots...How far back do they go?

• ‘Eliza’: 1964-1966
  • Mimic Rogerian therapist

• ‘Parry’: developed by psychiatrist, 1972.
  • Mimic person with ‘paranoid schizophrenia’
  • 33 psychiatrists asked to identify ‘real’ v computer patients
    • Correct 48% of the time (chance)

• 1973 Conference: ‘When Parry met Eliza..’
  ELIZA: Good Evening. Tell me your problems.
  PARRY: People get on my nerves sometimes.
  ELIZA: I am not sure I understand you fully.
  PARRY: You should pay more attention.
  ELIZA: Suppose you should pay more attention.
  PARRY: You're entitled to your own opinion.
Therapy and technology

• Facial expressions test
  • Distinguish expression of real pain vs faked expressions of pain

• Humans v Computer (facial recognition software)

• Humans.........55%; Computers.....85%
  • Bartlett, 2014 (Current Biology, 24, , 738–743)
Therapy and Technology: Some considerations..

  - Outcomes for clients diagnosed ‘schizophrenic’
  - Symptom improvement and functioning

- “Good outcomes”
  - Group A: 75%
  - Group B: 27%
  - 5 year follow up, much the same

- Critical variable influencing outcome:

- “The personal qualities of the physician are important factors in determining the clinical outcome”
  - Good outcomes: look for/explore meaning; collaborative; flexible; curious
  - Poor outcomes: assume ‘wayward mind that needs correcting’; prescriptive; point out ‘mistakes’
Therapy and Technology: Some considerations..

• Neural Synchronization during Face-to-Face Communication
  (Journal of Neuroscience, November 7, 2012, 32(45):16064 –16069)

• Face-to-face communication is characterized by a significant neural synchronization between partners

• Mirror neurons – differentially triggered in different kinds of interaction

• Interactional synchrony (Trevarthen)
Some questions for us to grapple with…
Therapy and Technology: Questions to Grapple With....

Is there anything we can do that technology can’t?
Some questions for us to grapple with….

• What, if any, are the technical limitations to the interventions or therapies that IT can deliver?
Therapy and technology

• What are the limits of what is possible?

You insist that there is something a machine cannot do. If you tell me precisely what it is a machine cannot do, then I can always make a machine which will do just that.

— John von Neumann —

• (attributed to von Neumann, 1948)
Some questions for us to grapple with:....

Is there anything we can do that technology can’t do, \textit{in principle}?
Some questions for us to grapple with....

• What, if any, are the psychological limitations to the interventions or therapies that IT can deliver?
Some questions for us to grapple with....

• What do we know about the vested (business) interests involved in digitalised therapy?

• Should we be concerned?
Some questions for us to grapple with....

• Can empathy be taught?
• Can empathy be programmed?

• Do we need to believe that the therapist has at least some knowledge and lived experience of what it feels like to be a human?

• Can computers be programmed to replicated mirror neurons?
Some questions for us to grapple with....

• If we accept that therapy & mental health are deeply contested areas, contested in terms of:
  • How we understand distress (life experience/biology)
  • Therapy as relationship/therapy as technical intervention
  • Purpose: return to work/function v understanding of self
  • Delivery of therapy in NHS: increased access agenda...but increasing access to what?

• How might increased use of technology in delivering ‘treatment’ contribute to above considerations?
Some questions for us to grapple with....

• Can psychological therapy be both scientific (operationalisable, quantifiable, manualisable) and unique to human therapists?
A (whimsical) taxonomy of psychologists’ ways of relating to computerised therapies......
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• Lemmings:  

• We uncritically embrace computerised therapy, oblivious to the business interests involved in this, completely overlooking the philosophical & socio-political implications, but seduced by the contribution of computerised therapy to meeting our targets, to cutting costs and ultimately to the demise of the profession.
A (whimsical) taxonomy of psychologists’ ways of relating to computerised therapies......

• Luddites

• We’ll rail against the growth of technology, the increasing medicalisation of clinical psychology and the blossoming of the commoditisation of therapy, ultimately no more effectively than Kanute against the tides. We survive in our roles just long enough to reach retirement age.....
‘If you’re afraid that you might be replaced by a computer, then you probably can be – and should be’

William H Bossart, 1st computer science teacher, Harvard early 1970s
A (whimsical) taxonomy of psychologists’ ways of relating to computerised therapies.......

• Liberators:

  • We recognise that some elements of therapy are manualisable and accept that ultimately these can be delivered with greater ‘fidelity’ by computers and recognise this as an opportunity to liberate clinical psychology from the mundanities of manualised intervention to return to a role more congruent with our training & expertise...
    • Understanding the damage that human relationships can do
    • Highlighting this through research
    • Investigating ways of alleviating the impact of this damage on the individual
The End
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