

Understanding and managing your Digital Footprint

Privacy in the 21st Century

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Why should we care about digital footprints?

- Your digital footprint has value.
- It is systematically collected, mined and used for profit... just not by you.
- There is a strong commercial incentive for others to exploit your data.
- What do you get in return, and is it a fair bargain?
- It is hard to understand something you can't see; even harder to manage it.

Goals for this session

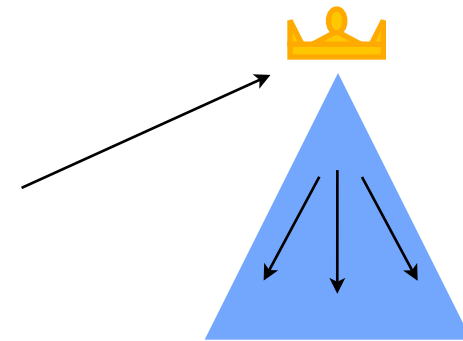
- Examine digital footprint principles
 - A short history of informational footprints
 - What does your digital footprint mean to you and others?
- How do digital footprints relate to your privacy?
 - Your digital footprints
 - Data About Others... the DAO of Privacy
- Some tips on what to do next
 - Privacy attitudes, choices and tools
 - ISOC resources
- *Real* goal: to start changing the way we think about privacy choices

A short history of footprints

- 9th Century (around 890AD)
 - A viking called Ohthere/Ottar dropped in on King Alfred of Wessex...



- His travelogue became part of Alfred's "essential curriculum"
- Few people could create/keep a permanent record
- "Established" texts created an international body of knowledge
- Ohthere understood how to use the information infrastructure of his time

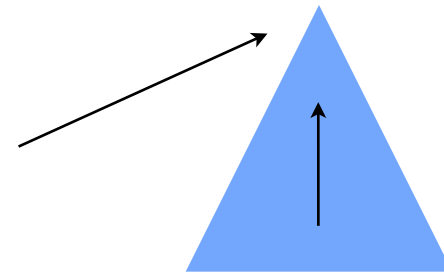


A short history of footprints

- 20th Century (June 1968)
 - Neil Armstrong became the first of a dozen human beings to leave footprints on the moon



- Some of his footprints are still there
- The moonshot was the pinnacle of the military-industrial space race
- That, in turn, was a product of the global Cold War
- The Apollo 11 mission itself cost about \$25bn (around \$170bn today)
- A permanent footprint cost a lot...

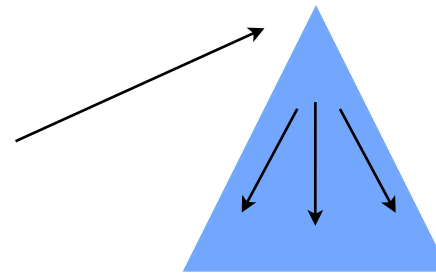


A short history of footprints

- 21st Century
 - Can we now leave anything *but* permanent footprints?



- We generate digital footprints actively and passively on- and offline
- Since they are invisible to us, we behave as though our footprints are ephemeral
- The information infrastructure is ubiquitous, but all our data passes through intermediaries
- Their interests are not necessarily ours...



“Hang on... what do you mean, ‘offline’?”

	Active	Passive
Online	“Hi - just arrived at Heathrow. See you later.”	Got a cookie from 3rd party website
Offline	Had an appointment with my GP (!)	Drove past an ANPR camera

Whether or not it's the primary purpose of what you're doing, chances are you're adding to your digital footprints.

What does your digital footprint mean to you?

- Reputation
 - Even if you maintain you have “nothing to hide” (!), not all information is appropriate to every audience
 - Things taken out of context can be damaging
 - Inference plays a huge role in “big data” exploitation
- Money
 - Personal data is the raw material of identity fraud
 - Direct losses aside, the indirect cost of identity theft can be significant
- Control
 - Again, context is key: and we generally have no technical control over data “beyond first disclosure” - so keep it while you can!
- Freedom, and other rights...
 - Privacy is foundational to other rights, such as freedom of speech, access to information, and expression of your own cultural identity

The “rights” dimension: privacy is a foundational right.

“Privacy shelters dynamic, emergent subjectivity from the efforts of commercial and government actors to render individuals and communities fixed, transparent, and predictable.”

Julie Cohen (Georgetown University)
[What Privacy Is For](#)

“Privacy and freedom of expression are interlinked and mutually dependent”

Frank La Rue (UN Special Rapporteur)
[Protection of the right to freedom of expression](#)

“Privacy is integral to a free, fair and open society. ...

The notion that privacy is fundamental to democracy – is enshrined in article 8 of the European Convention on Human Rights.”

Nick Clegg (Deputy Prime Minister) - Speech, 4th March 2014
[Security and Privacy in the Internet Age](#)

What does your digital footprint mean to others?

- Revenue
 - You've heard the saying "If you're not paying for a service, you're not the customer, you're the product"...
 - "Free" online services are paid for with the value extracted from your personal data
 - Unfortunately, the fact that a service is paid for doesn't mean your data won't be monetized...
 - We should constantly review the "bargain" we make for online services
- Social graph
 - Your social graph reveals huge amounts about you, and often bridges the gap between work, social and family contexts
- Profiling
 - If you can be slotted into a demographic, inferences about other people can be applied to you
- Prediction
 - Social graphs, profiles, location data, shopping habits... all these build into a detailed profile of your hopes, wishes and aspirations.

How much do you know about me?

- **How much data might a networked social site have about you?**

- Max Schrems' Subject Access Request to Facebook resulted (in Dec 2012) in 1200 pages of data, in 57 different categories
- For comparison, Acxiom holds “an average of 1,500 pieces of information on more than 500 million consumers around the world”

- **What kinds of information might, say, Google have about you?**

- Your:
 - Wi-fi password (Yes, seriously!)
 - Search history
 - Device identifiers, ESSID (_nomap), car registration?
 - Address, house frontage, aerial photos
 - Geo-location (and history)
 - Photos
 - Emails, IMs, blogs, comments -> social graph
 - Docs
- But that's not all:
 - Feeds from face recognition, image tags, your sensors, other people's devices
 - Inference data (socio-economic profile, marital status, ethical values...)
 - ... and inference can re-identify 'anonymous' data

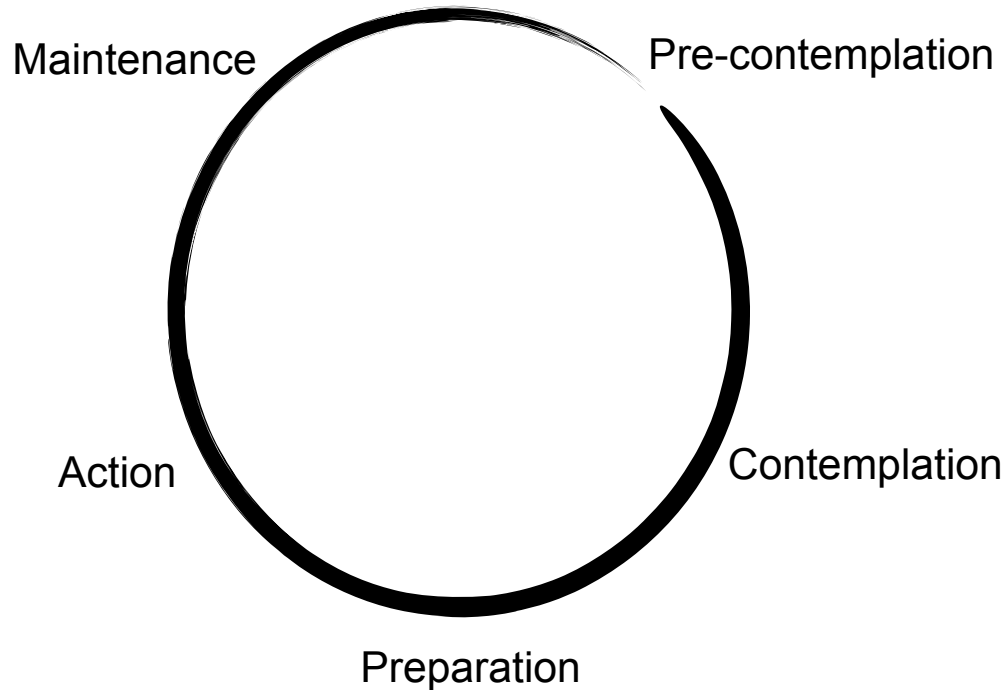
The DAO of Privacy

- The idea that you control “your” data is, unfortunately, out of date
- You privacy is affected by:
 - Data you disclose knowingly
 - Data passively collected about you
 - Other people’s opinions of you
- That’s a social reality. You can’t control the narratives other construct about you
- But...
- In the hyper-connected world, your privacy is also affected by profiling, behavioural analysis and inference data:
- Those can all be based not on information about you, but on Data About Others

Recap

- Our digital footprints are extensive, revealing and practically permanent
- They represent a source of risk to us, and a source of revenue to others
- Our digital footprints generate privacy risk for others, and vice versa
- And yet, with all this... we make bad privacy choices. Why, and what can we do about it?

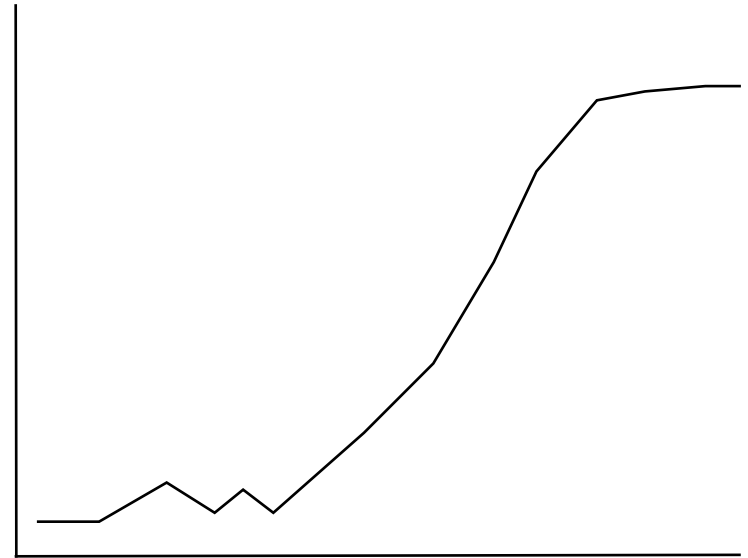
Stages in behavioural change



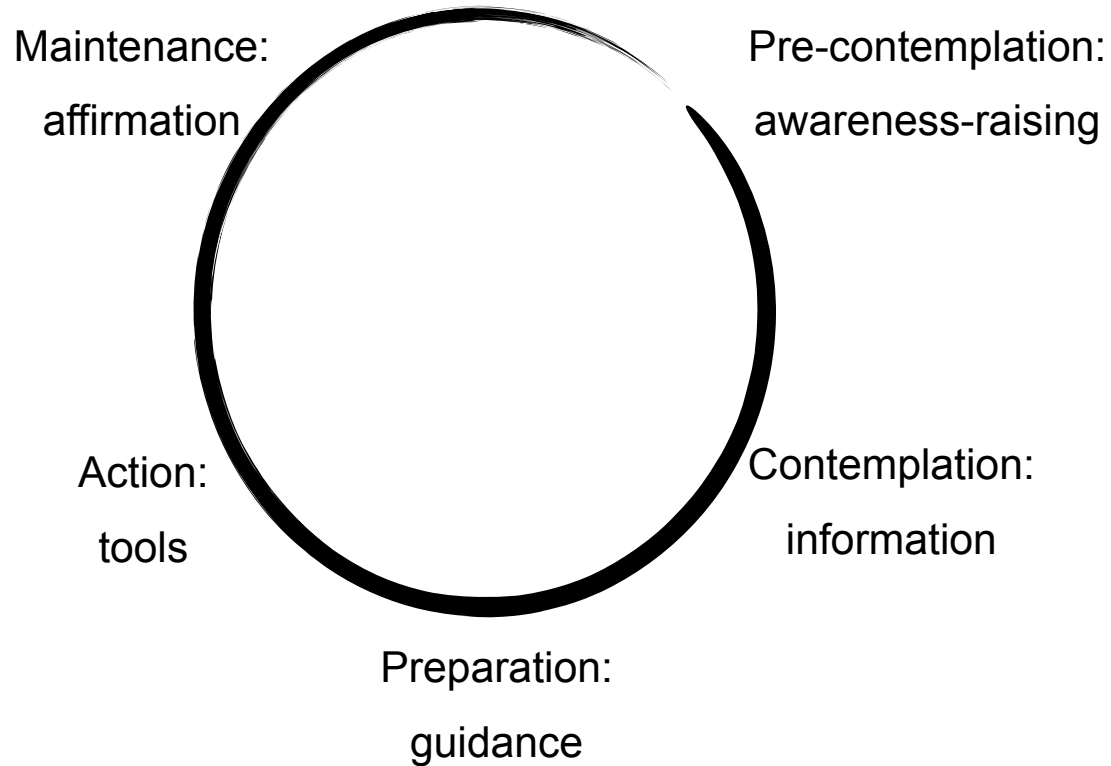
- This is one model for *sustained* behavioural change
- A one-off “nudge” won’t work
- See any differences from our current approach to privacy?
- Tools might help, but they aren’t the answer
- The goal is to change values, not just one decision
- Consent is a design issue...
- Privacy differs from e.g. weight loss; how do you know when you’ve succeeded?

What's the answer?

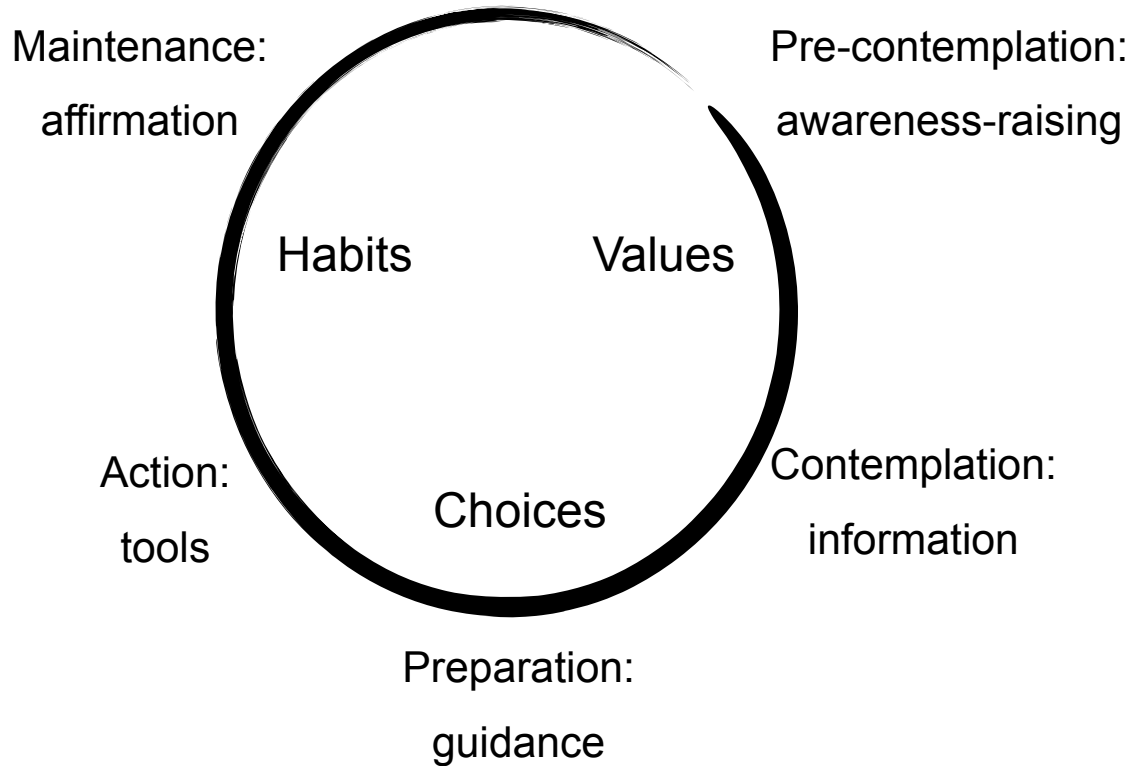
- Nagging?
- More privacy tools?
- Better privacy information
- Clearer understanding of the risks
- Timely, *specific* nudges
- Change in values
- Better privacy choices
- Healthier privacy habits



Nudge by nudge...



Phased goals...



ISOC materials to help you

- Digital Footprint “Reference Framework”: a set of short (2-3 page) pieces on a range of topics (economics, targeted advertising, cookies...)
 - <http://www.internetsociety.org/doc/digital-footprints-internet-society-reference-framework>
- A series of 9 interactive tutorials on the same topics
 - <http://www.internetsociety.org/your-digital-footprint>
- And coming soon... video animation clip
- Here’s the ISOC “landing page” for these materials:

<http://www.internetsociety.org/footprint>

Recap of goals

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Thank you

Any questions?

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