



Wales Centre for Public Policy
Canolfan Polisi Cyhoeddus Cymru

Increasing household waste recycling with behavioural science

Workshop report
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Further improving Wales' recycling rate

Wales is one of the best recycling nations in the world, and it recently reached its 64 per cent recycling target four years ahead of schedule (BBC, 2017). It is now ranked as the fourth best nation in the world for recycling (Eunomia, 2017). The next ambitious and challenging target for Wales to meet is 70 per cent of waste being recycled by 2024-2025 (Welsh Government, 2017). Given the low-hanging fruit has now been picked, future increases in recycling are likely to require targeted interventions that challenge more persistent behavioural barriers to recycling. To this end, behavioural change interventions are increasingly believed to be an important component of programmes tasked to improve household recycling rates.

To help understand how behavioural change interventions might help increase the household recycling rate further, WCPP hosted a workshop in May 2018. The workshop brought together some key stakeholders including Welsh Government policy officials, local authority waste management and environment directors, a leading supermarket chain, landlord associations, academics and behavioural change practitioners. The event also benefited from expert input and paper submissions from Professor Stewart Barr (University of Exeter), Professor Anna Davies (University College Dublin) and Carolin Reiner from the Behavioural Insights Team (BIT).

The aims of the workshop were to help develop a shared understanding of behavioural change approaches, and to begin to generate initial ideas for appropriate behavioural change interventions in Wales.



Background analysis

To better understand the demographics of recycling in Wales and identify which waste products are not regularly recycled, the Welsh Government commissioned WRAP to undertake segmentation and waste composition analyses (Morris Hargreaves McIntyre, 2017; WRAP Cymru, 2016). The workshop focused on two specific segments of the population:

Segment 1: 'What's in it for me?'

- This segment is social. They are often urban dwellers who are cynical and resistant to authority. 14 per cent of the population in Wales falls into this segment.
- This group routinely fails to recycle even common items, citing excuses of inconvenience and distraction as key barriers. They are unaware of recycling schemes. This segment stands out as the worst contaminators and they also produce the lowest yield of recycling.

Segment 6: 'Indifferent'

- This segment tends to focus on a few personal priorities. Social norms and peer pressure shape their behaviour, and they don't want to stand out. 15 per cent of the population in Wales falls into this segment.
- This group struggles to recycle. They do not actively contaminate, but they don't stop to check if they're getting it right. They tend to take the easiest path. They are poor food recyclers and are generally inconsistent.

The composition analysis provided a breakdown of waste collected from kerbside collection matter, household waste recycling centres, residual waste collected from businesses and mechanical sweepings. It highlighted that **food waste** and **recyclable plastics** comprise a large percentage of collected waste.

- Dense plastics make up 7.4 per cent of the composition analysis. 3.6 per cent of these plastics are recyclable and there is scope for further capture of these goods. Both segments 1 and 6 also struggle to recycle dense plastics effectively. 18.9 per cent of total kerbside collected waste was food. 12.2 per cent of this was still in its packaging and unavoidable food waste only made up 3.4 per cent of the composition.

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Key themes emerging from the workshop

Moments of change

A recurring point of discussion during the workshop was the importance of targeting 'moments of change'. Moments of change are junctures when an individual's existing habits and practices are disrupted. During these moments, the barriers to good recycling practice are often interrupted or in flux, and individuals are more susceptible to changing their behaviour.

Our experts and participants felt that behavioural change interventions could be more effective if they were strategically targeted at moments of change. Our workshop discussed how moments of change provide an **opportunity to draw attention to positive social norms** and the possibility of creating social pressure during moments of change. We also discussed practical instances when these moments of change might occur and what appropriate interventions during these moments of change might look like:

- Moving home was offered by the workshop as a moment of change example. When people move, their immediate environment changes and they are forced to learn new rules and procedures. During these moments, individuals and households could be particularly susceptible to behavioural change interventions. The workshop suggested that collaboration between local authorities, housing providers, estate agents and property managers could be beneficial. We discussed two elements of this intervention. First, the importance of increased collaboration between housing providers and local authorities, which could help ensure that desirable recycling practice and instructions about local waste collection are sufficiently communicated to new residents. This could be achieved by passing on a package of recycling information to housing providers and estate agents, who could then distribute it to new residents. Second, practical support, such as ensuring local authorities provide the correct household and kerbside collection bins.

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Social norms

Social norms were identified as having a significant influence on recycling behaviour. Household waste management norms such as putting rubbish out for collection on the right day, and in the containers requested by councils, are widely established. Social norms were thus identified as a **positive tool** that could be used to improve recycling behaviours, and the target population segments outlined in the WRAP report are anticipated to respond to social pressure. This discussion was used as an entry point to explore what norm disrupting interventions might look like:

- Currently, positive recycling norms are often 'invisible' to the public as recycling is a largely private activity, which takes place within the household. Workshop discussions suggested that **finding ways to make recycling behaviour more visible** by, for example, sticking 'gold stars' on bins to indicate a good recycling household could help make good recycling behaviour more visible, generating social pressure to follow suit, and motivating households that are currently poor recyclers to conform to this (perceived) social norm.
- The development of **norm disrupting interventions** may also be useful for changing poor recycling behaviour. Our workshop felt that often bad recycling norms are habitual, and that changing recycling behaviour would require strategically finding ways to disrupt poor recycling habits. Alongside the previously discussed moments of change, finding ways to modify the behaviour of individuals by making them more conscious of current habits was identified as a necessary step to change recycling behaviour. The WRAP 'Recycle Now' campaign was offered as an example of how the local benefit of recycling practice could be communicated and current bad behaviours rectified (WRAP, 2018).
- The workshop also discussed how social norms might, where appropriate, be used to stigmatise poor recycling behaviour – e.g., by more clearly communicating how poor recycling damages local communities and contributes to wider social problems. It was agreed however that such interventions need to be carefully used, to avoid alienating people who might already feel detached from society.

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The household

A third major theme that emerged was the importance of understanding the 'black box of the household' (Barr, in workshop), both in terms of household politics and the recycling infrastructure within households:

- Stewart Barr emphasised how **household politics** and the dynamics between household members can affect recycling. He focused on the example of multiple occupancy households, where individuals have different learned behaviours: in student households, for example, attitudes to recycling can vary greatly and coordinating a recycling regime between individuals with different learned behaviours can be challenging. Our workshop reflected on the household and felt that even in cases where individuals are committed to recycling, it may take just one non-committed individual to undermine a recycling regime through contamination. Better understanding the dynamics between household individuals and the different social practices within the household was suggested to be important for designing effective interventions.
- Our discussions also highlighted how **household infrastructure** can act as a significant barrier to recycling. Participants suggested that if individuals find it difficult to recycle and existing infrastructure is not intuitive, this will reinforce the view that recycling is 'inconvenient'. Using the previous example of student households, it was suggested that a lack of adequate infrastructure can reinforce the resistant behaviour of non-recyclers and make it difficult for others to effectively recycle.
- The workshop raised the question: how can recycling within the household be made easier and more desirable? Our experts suggested that **people tend to prioritise comfort, cleanliness and convenience**. Changes in infrastructure that improved these three aspects of recycling were felt to have the potential to change recycling behaviour. For example, by making recycling boxes more aesthetically attractive or making it easier for households to sort waste within the home.
- There is an important **aesthetic component** to household recycling. Our workshop discussed how making recycling infrastructure in the home more aesthetically pleasing might change the way people perceive waste and help encourage recycling behaviour.



Framing recycling interventions

Our workshop discussed the importance of appropriately framing recycling interventions and suggested some current areas where recycling practice could be more coherently framed and communicated.

- The workshop felt that at the moment, the **messaging around desirable recycling behaviour in Wales is sometimes inconsistent** and recycling instructions are not always clear.
 - For example, some workshop participants felt that the recycling instructions communicated by local authorities contradicted advice communicated by other sources, including the Welsh Government.
 - Confusion generated by the presence of different recycling systems and norms across Wales' 22 local authorities was highlighted as a potential issue for those who move between areas (though the numbers of people affected was unclear).
 - It was suggested by our experts that framing recycling problems in a consistent and coherent manner is crucial when targeting stubborn learned behaviours; if households are expected to change recycling practices too often, some may view recycling as just too difficult and will default to poorer – but easier for them – recycling patterns.
- It was felt that **recycling communications should be persuasive as well as explanatory**. For example, ensuring that information on how to sort rubbish is communicated simultaneously with the positive environmental and societal benefits of recycling. This example linked back to the workshop discussion on social norms and the need to effectively communicate the positive community and individual benefits of recycling.
- **Framing enforcement as a positive intervention might improve its effectiveness**. Instead of only communicating the need to comply and the risk of a fine, communicating the positive contribution the policy will make to local communities may increase people's receptiveness and compliance. In this way, people could better understand why enforcement is appropriate and might be more likely to accept its legitimacy.

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Co-producing behavioural change

A further theme that emerged as we reviewed notes drawn from across the different discussions during the workshop was the importance of co-producing behavioural change programmes, and the specific interventions. Our experts and participants felt that communicating and framing recycling challenges, as well as possible solutions, should not be left to government:

- The workshop suggested that **community groups** might be well placed to identify the local barriers to recycling. These groups can therefore be valuable in helping to design interventions appropriate to the specific local context, to ensure that they resonate.
- Schools were highlighted as a particularly promising group that could help communicate and frame recycling behaviour. By communicating good recycling norms to children, our workshop suggested **kids can help persuade parents** and help shift household politics in the direction of good recycling practice.
- **Social media** was suggested as an excellent medium through which to harness the 'wisdom of the crowd' – for example, gathering ideas and finding out about what is being trialled elsewhere to engage the most reluctant recyclers (such as segment 6). Open engagement on social media can also help grow the array of co-producers within Wales willing to work with public services to improve recycling.

Path dependency

Workshop discussions also highlighted the challenge of designing interventions that avoid, or at the very least, mitigate negative path dependencies. Path dependence explains how the choices we face now are constrained by previous decisions made or events in the past, even though past circumstances may no longer be relevant. The risk of negative path dependency was raised in relation to a number of discussed interventions and groups:

- For example, the well-intentioned decision to bring forward the target date for Wales to reach 70 per cent household recycling by 2020 may encourage local authorities to **chose enforcement measures over alternative behavioural change interventions** in anticipation that enforcement will have a faster impact (as well as being administratively easier / less experimental). Similarly, it may **lock authorities into recycling technologies** that are simpler / faster to implement (e.g., incineration) but not environmentally optimal.
- The issue of path dependency also cut across the analysed segments. For example, segment 1 and 6 tend to be unengaged with current recycling initiatives. The workshop discussed the importance of ensuring that future initiatives to increase recycling uptake did not have the **unintended consequence of alienating these segments**. To ensure this, some participants suggested that designed interventions should focus on **incremental change** and, while creating social pressure could have beneficial consequences, social pressure should be weighed up against the risk of alienating target segments.
- On food waste and plastics, it was recognised that encouraging people to separate out food waste from plastic before putting it in the appropriate bins **might undermine efforts to get people to produce less food waste in the first instance**. The workshop discussed how the identification of appropriate short-term and long-term interventions should be matched with a process of identifying possible risks and developing synergies between planned interventions (aka a 'theory of change').

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Interventions to change behaviour among key population segments and in relation to waste composition

Break-out group discussions

Segment 1: 'What's in it for me?'

Segment 1 is generally social. The workshop felt that they might be prepared to learn about recycling and could be responsive to new information. However, given that the WRAP analysis indicated that they are generally unaware of good recycling practice, it was felt that more could be done to communicate appropriate behaviours to this segment. Our workshop participants suggested that clear and non-conflicting communication of information might be important for achieving change amongst this segment. Given this segment struggles to understand the benefits of recycling, it was felt that behavioural change interventions should be designed to show this segment 'what's in it for them'. To this end, associating good recycling behaviour with rewards and using positive reinforcement was considered particularly important for changing the behaviour of segment 1.

- One idea that emerged from the workshop was a **regret lottery**. The broad idea of such a scheme would be to enter all households that recycle regularly into a local lottery as a prospective reward; however, winners would only receive their prizes if they had recycled correctly that week. (Detailed design was not discussed, but the use of prizes as a cost-effective incentive was highlighted as proven elsewhere).
- **Making information easy and accessible** to this segment was seen as important. While this segment does not actively seek out information on recycling, they are social and do seek out information on other things. Our workshop suggested that finding ways to promote recycling information through **social media** or through **organisations**, such as retailers and community groups, might indirectly provide recycling information to this segment.
- Despite the rich analysis in the WRAP report, it was felt that there was a need for further detail on **what motivates this segment**. This was considered important for identifying the appropriate barriers to recycling among this group and for more effectively designing behavioural change interventions. This is a particularly diverse segment, which included some students, as well as older people. However, as they tend to be sceptical of authority, our workshop suggested that interventions could be designed around the principle of **re-engaging this segment with government**, or finding ways to **communicate recycling practice through locally based intermediaries and organisations**.

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Segment 6: 'Indifferent'

The WRAP analysis suggests that Segment 6 is more locally focused than most of the other segments. Our discussions suggested that **framing waste and recycling issues around local or community issues** might be effective for changing the behaviour of this segment.

- One suggestion was to **develop messaging that not only hooks in to local issues, but also intertwines with broader recycling narratives**, to create an integrated agenda that resonates both locally and at the national level. E.g., this might be done for plastics. Instead of emphasising the global damage plastics cause to oceans, demonstrating the damage they cause to *your* community too could help make this issue, and other issues, resonate. Other issues and potential interventions discussed in relation to this segment included:
- Our participants felt that an important point to consider was how this segment related to wider society. Given that this segment does not have an interest in recycling, nor does it seek out information on recycling, it may feel detached from wider social norms and practices around recycling. To address this, it was suggested that behavioural change interventions should find a way to engage them in **mainstream recycling norms via a wider approach to re-engage them with society**.
- **Social pressure and the creation of stigma for non-recycling behaviour** might be effective in changing the behaviours of this segment. While this segment of the population lacks internal motivation to recycle, they do care about fitting in with society and not challenging prevalent social norms.
- **Making existing initiatives more participatory** might help engage with this difficult to reach segment. As they are not actively on the look out for information, our workshop suggested it is **vital that information is taken directly to them**. For example, instead of simply posting leaflets through doors, engaging households in a doorstep discussion about recycling might help communicate prevalent social norms and persuade them to change their behaviour.
- **Making recycling more visible** might also achieve change among this segment. Good recycling behaviour is often hidden in the privacy of the household. Finding ways to make the process of recycling more visible might make this segment feel that their non-recycling behaviour is going against expected social standards. This might encourage behavioural change.

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Plastics and food waste

The priority in the break-out group was **the need to prevent people from putting plastic packaged food, and out of date food, in the general waste**. This was suggested to be a significant cause of recycling contamination, as well as an area where behavioural change interventions might be effective. Participants felt that instead of trying to target a wide suite of behaviours around food waste and plastics, focussing on this specific behaviour was more realistic in the short-term and could feasibly be addressed through a designed intervention.

- **Enforcement** was discussed as a new intervention to be trialled soon in Wales (in Rhondda Cynon Taf) that might work to ensure that people correctly separate food waste from plastic. This discussion followed a similar theme to the overarching workshop discussion around framing (see above). The group suggested that **instruments such as enforcement should be coupled with rewards** for households that recycle well. This was suggested to provide a more holistic 'carrot and stick' approach.
- Our workshop participants suggested that current information campaigns around food waste and plastics could be modified to ensure that communicated messages resonate more effectively. It was felt that current information campaigns sometimes focus on ideal standards and abstract issues, which do not immediately resonate with all segments of the population.
 - Instead of telling individuals and households how they can be 'perfect recyclers', information campaigns could also provide **positive examples of how 'people like me'** can improve their recycling behaviour. These information campaigns could include practical steps that show how incremental changes could be made.
 - Sticking with the theme of framing, our participants also suggested that **a campaign building on Wales' success to date might be effective** in achieving behavioural change and encouraging people to think more thoroughly about recycling to help Wales meet the next target. This would help persuade people they are contributing to **a collective goal, linking into national pride**, and that even a small change in the way they handle food and plastics would help meet this goal.



Participant reflections

At the end of the workshop, we asked all participants to reflect on the key ideas that resonated for them. Four especially stood out:

1. Participants felt it was important to fully **understand what goes on in the household**. The importance of considering household politics when designing interventions and potentially targeting the dynamics between household individuals through interventions was seen as a concept that had potential by workshop participants. Participants also discussed how the aesthetics of the household could be re-designed to encourage recycling. This was seen as important for **improving perceptions of recycling** and for **making recycling more comfortable, clean and convenient**.
2. Our workshop participants also thought that behavioural change interventions would be more effective if they were **appropriately framed**. It was felt that this required being **consistent and persuasive in communicating recycling practice**.
3. **Uncovering and promoting positive in-household norms** as a good way of structuring the design of behavioural change interventions. In terms of positive household recycling behaviours (such as washing out containers; an 'eat me now' container in the fridge), these are often hidden in the privacy of the household. Participants perceived significant potential in rendering these good social norms visible, and in doing so, encouraging others to adopt them.
4. The need to **consider path dependencies** was emphasised throughout, and reiterated at the end by several participants. The need to ensure that designed interventions adequately weigh up potential unintended consequences was seen as important, and seemed not to be standard practice (yet). Furthermore, it was felt that the application of short-term interventions should coincide with an evaluation of what the possible long-term consequences might be.



Thoughts on next steps

The aims of the workshop were to help develop a shared understanding of behavioural change approaches, and to begin to generate initial ideas for appropriate behavioural change interventions in Wales. Overall, the workshop informed the possible shape of the Welsh Government's next household waste reduction programme, generating some key ideas that can inform the design of future interventions at the local and national level.

The next, challenging, step - to structure the waste reduction programme, and crucially **identify the specific behaviours to target**, and **design each intervention approach** - lies with the Welsh Government policy team. While this design process was not explicitly discussed in the workshop, there are several ways in which this could be done which were touched upon.

- For example, BIT outlined their EAST framework (Service et al., 2014). Further information about this framework is included in the BIT annex report.
- Another appropriate framework could be the Capabilities, Opportunity and Motivation (COM-B) model (Michie et al., 2011). This model aims to offer a comprehensive approach to addressing behaviour *in context*.

In addition to ensuring that interventions are initially well-designed, careful **trialling of pilot interventions** is important to ensure that interventions work as expected. A range of ideas were put forward in our workshop, but all need further research, design and testing. Further discussion and dialogue between Welsh Government and partners with experience of trials could build on these discussions.

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Annex: Expert papers

- Barr, S. (2018). **Wales recycling behaviour change programme.**
- Davies, A. (2018). **Behaviour change and household recycling: Achieving the next wave of improvement in Wales Workshop.**
- Reiner, C. (2018). **Applying behavioural insights to encourage recycling in Wales.**

These expert papers are available at: www.wcpp.org.uk/publication/increasing-household-waste-recycling-with-behavioural-science/

About the Centre

Our mission

The Wales Centre for Public Policy was established in October 2017. Its mission is to improve policy making and public services by supporting ministers and public services to access rigorous independent evidence about what works.

The Centre collaborates with leading researchers and other policy experts to synthesise and mobilise existing evidence and identify gaps where there is a need to generate new knowledge.

The Centre is independent of government but works closely with policy makers and practitioners to develop fresh thinking about how to address strategic challenges in health and social care, education, housing, the economy and other devolved responsibilities. It:

- Supports Welsh Government Ministers to identify, access and use authoritative evidence and independent expertise that can help inform and improve policy;
- Works with public services to access, generate, evaluate and apply evidence about what works in addressing key economic and societal challenges; and
- Draws on its work with Ministers and public services, to advance understanding of how evidence can inform and improve policy making and public services and contribute to theories of policy making and implementation.
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