What works to change attitudes towards disabled people

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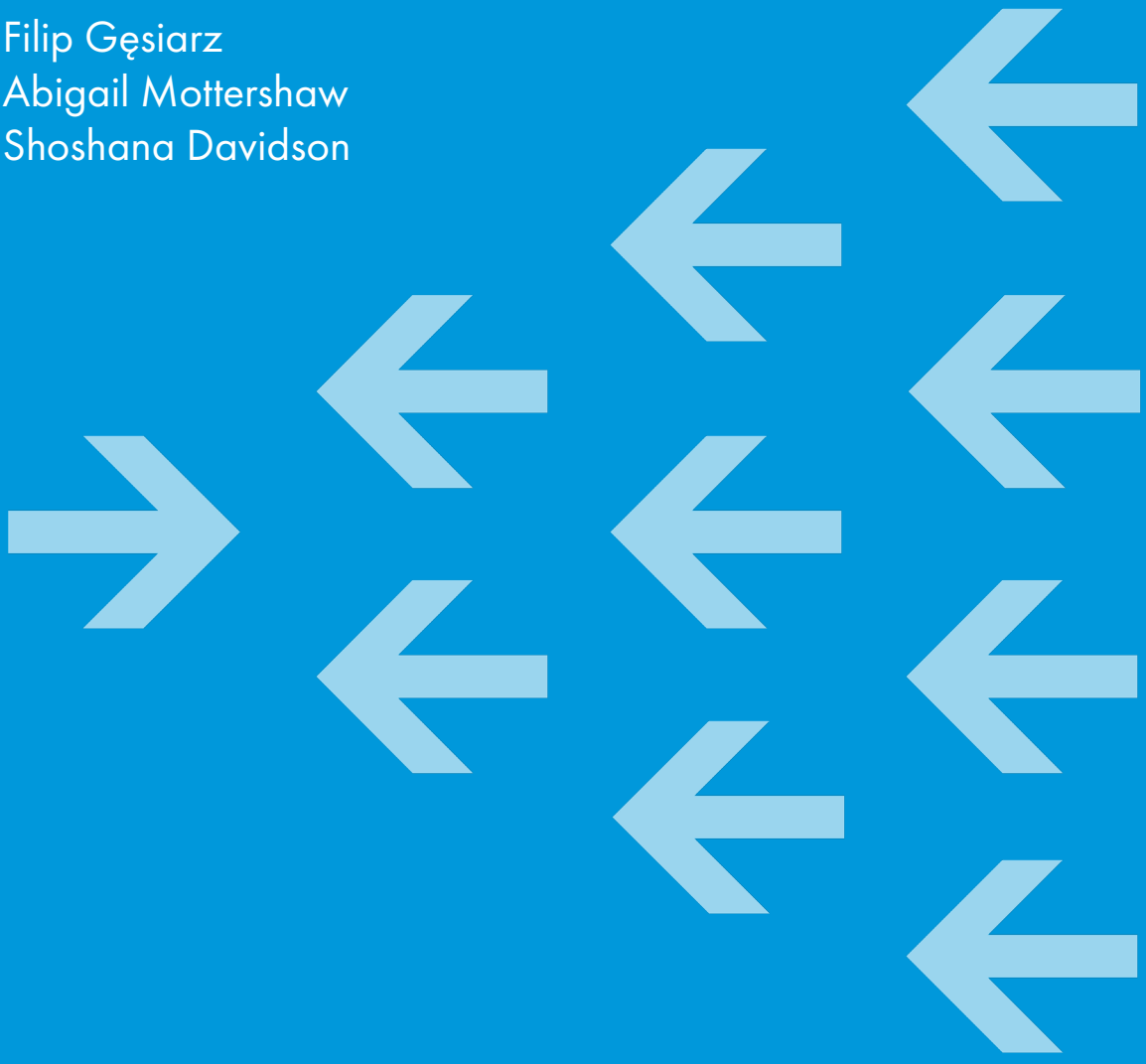

THE BEHAVIOURAL INSIGHTS TEAM

SCOPE = Equality for disabled people

About us

The Behavioural Insights Team

The Behavioural Insights Team (BIT) is one of the world's leading behavioural science organisations, working around the globe to improve people's lives. Through its teams in the UK, France, US, Canada, Australia and Singapore, BIT works in partnership with governments, local authorities, businesses, charities and NGOs in over 30 countries. We design scalable solutions to tackle major policy problems and deliver improved public services and social outcomes.

Scope

Scope is a disability equality charity in England and Wales. Scope campaigns to achieve a society where all disabled people enjoy equality and fairness. We provide practical advice and emotional support through our Scope helpline, online community, a range of employment and child sleep services, community engagement programmes, partnerships and more. We campaign relentlessly to create a fairer society. We partner with others to increase our reach and impact and use our collective power to change attitudes and end injustice.

A note on language

This report refers to 'disabled people' or 'disabled person' and does not use the terms 'people with disabilities' or 'person with a disability'. This aligns with the social model of disability as opposed to the medical model. The social model says people are disabled by society, not by their impairments or conditions.

This is preferred by the UK's disability activist community, however, individuals and global regions may have different preferences. For example, researchers based in the US typically say 'people with disabilities'. We respect other people's language choices.

1. Executive summary

Negative attitudes towards disabled people are common.[1,2] Despite this, there is very little evidence on what works and what does not work to reduce negative attitudes towards disabled people.

Scope partnered with the Behavioural Insights Team (BIT) to run an online experiment. BIT ran a randomised controlled trial (RCT) to test whether different messages influence attitudes towards disabled people among the general public (n=5,498).

Recommendations for future mass media campaigns

Based on the insights from the study, we recommend the following principles for designing media campaigns.

- **Affirm the status of disabled people.** Positive representations of disabled people that foster respect and preserve dignity may help to avoid pity, even if coupled with examples of unfair treatment or other negative experiences.
- **Share stories and personal experiences.** Personal stories that centre a named individual are easier for audiences to connect with than generic stories or faceless statistics.
- **Encourage people to think about how they would feel facing inequality.** Increase the impact of a personal story by encouraging the audience to imagine a disabled person's perspective in terms of a universal emotion or experience, e.g. unfair treatment. This may result in 'self-persuasion'. Avoid asking non-disabled people to imagine being disabled.

Take care when:

- **Talking about injustice.** Highlighting injustice in a way that positions disabled people as vulnerable may reinforce negative stereotypes and lead to audience avoidance.
- **Using facts and figures.** Without emotional engagement, facts and figures may alienate audiences.

[1] The Disability Unit (2021). Rights and perceptions: National disability strategy explained.
[2] Scope (2018). The disability perception gap.

What we tested

The messages we tested were based on existing evidence and common messages used in campaigns. BIT co-designed these messages in workshops with Scope staff and disabled people.

The seven messages were tested against seeing no message at all:

- **Things in common:** the message emphasised everyday common activities and identities shared between disabled and non-disabled people
- **Humour:** the message used humour to demonstrate the impact of being disabled
- **Behaviour change:** the message highlighted specific actions that can be taken to support disability equality
- **Exceptional positive representation:** the message portrayed an exceptional disabled athlete and described her as 'superhuman'
- **Highlighting injustice:** the message highlighted the disadvantages or injustice faced by disabled people
- **Perspective-taking:** the message asked participants to imagine the perspective of a disabled person
- **Factual:** the message used facts or statistics to demonstrate the impact of being disabled

While we wanted to find messages that would have a positive impact on attitudes, in some cases we also expected to demonstrate an (unintended) negative impact for messages that are commonly used in campaigns, but have not been evaluated.

What we found

The 'perspective-taking' message was the strongest performing message. Contrary to expectations, the 'perspective-taking' message improved our overall measure of explicit attitudes towards disabled people the most. It was also one of two messages that increased the likelihood that people would click on further information about how to support equality for disabled people. While perspective-taking messages can have a negative effect, importantly, this message encourages readers to imagine a relatable perspective, specifically *being treated unfairly* due to being disabled, rather than to imagine *being disabled*. Asking readers to imagine such unfair treatment may have led to 'self-persuasion', which evidence suggests makes personal stories more effective at changing attitudes. In addition, the disabled person was not depicted in a low status way. This finding contributes to the literature as the first piece of evidence to find that perspective-taking is effective at improving attitudes towards disabled people.

'Exceptional positive representation' was the second most effective message. Also contrary to expectations, this message was the second most effective. It is likely

that this was driven by (a) the personal story and (b) the positive representation of a disabled person in a position of status. It is unlikely that an ‘exceptional’ representation is necessary to be effective, given the ‘perspective-taking’ message involved the personal story of an ‘unexceptional’ disabled person. What both results together suggest is that affirming the status of disabled people represented in campaign stories is important, whether that’s in terms of highlighting responsibilities or passion at work, in the community, with family and friends, or achievements. Neither of the risks of this message appeared to emerge: it did not appear to minimise barriers faced by disabled people, and it generalised to disabled people in general. However, we would not recommend using the term “superhuman” as it is unlikely this drove the effect and is not received well by the disability activist community.

The ‘factual’ and ‘highlighting injustice’ messages had some negative effects. The ‘factual’ message was the only message to decrease the perceived competence of disabled people. Meanwhile, it increased how much people said they thought of disabled people with discomfort and awkwardness. This supports the literature that finds personal stories are more persuasive than facts. However, not all personal stories are as effective as each other. The ‘highlighting injustice’ message centred on a personal story, but the disabled person was described in a low status way. This message decreased how much people said they thought disabled people can take care of themselves. Meanwhile, the audience was least interested in seeing this message again. The highly negatively emotive nature of it may have made it feel threatening and led to avoidance. In both cases, future research should understand if combining these with a solution or positive message may have alleviated their negative effects.

The messages improved attitudes among non-disabled participants more than disabled participants. Non-disabled people had less positive attitudes to start with and these improved to become more aligned with disabled people’s attitudes in response to the messages. All messages increased support for equality among non-disabled participants, but not among disabled people whose support was already 12 percentage points higher in the control group. This suggests that simply exposing non-disabled people to information of any kind about disabled people is likely to increase their support for disabled people’s equal rights and access in society. The ‘perspective-taking’ message was the only one to have a positive impact for disabled participants.

2. Introduction

2.1 Background and aims of the project

In the UK, 22% of people are disabled.[3] Meanwhile negative attitudes towards disabled people are common with only 12% of the general public agreeing that views held by members of the public about disability are generally helpful for disabled people.[4,5] Tackling negative attitudes towards disabled people is a UK government priority, as part of the National Disability Strategy published in 2021.[6] However, nearly 30 years after the UK's first disability discrimination legislation,[7] the evidence is limited for how to influence public attitudes and behaviours towards disabled people.

As huge investments are made to conduct mass media campaigns, an examination of the evidence and efforts to fill in the gaps is critical. The aim of this project was to understand what works in terms of the messaging in mass media campaigns to improve attitudes towards disabled people. This project was commissioned by Scope, the disability equality charity in England and Wales, as part of their attitudes research programme to understand what works for attitude change specifically around media, communications and representation. Scope commissioned this research because both the literature and Scope's own research identified negative attitudes, and the impact of those negative attitudes as a key factor in the inequality that disabled people face day to day. The findings from this research will inform as wide a range of media campaigns as possible and so the research did not focus on a particular context or disability experience.

To achieve this, we carried out the following activities:

- Conducted a literature review to understand the existing evidence for what works to change attitudes towards disabled people.
- Consulted key experts and stakeholders working in this area.
- Selected message types that were both promising, but did not have enough evidence (based on the consultation and literature review), or were common in mass media campaigns that aimed to change attitudes towards disability.
- Designed the messaging to test in collaboration with Scope staff and disabled people across two co-design workshops.
- Designed, implemented and evaluated an online experiment to test the impact of different messages on attitudes towards disabled people.

These activities are described in more detail in this report.

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[3] Department for Work and Pensions. (2023). Family Resources Survey: financial year 2020 to 2021.
[4] The Disability Unit (2021). Rights and perceptions: National disability strategy explained.
[5] Scope (2018). The disability perception gap.
[6] HM Government (2021). National Disability Strategy.
[7] The Disability Discrimination Act, 1995

2.2 Literature review findings

BIT carried out a literature review to understand (a) which key types of broad attitudes regarding disabled people we would seek to improve, and (b) what the existing evidence suggests works to change attitudes towards disabled people.

Several approaches are commonly used in the media, but the experimental evidence for how effective they are is largely lacking. Other approaches have a positive effect for changing attitudes towards other marginalised groups, but have not been tested on attitudes towards disabled people. Since the evidence is limited, the review highlights what is worth testing in the online experiment to fill those gaps.

Attitudes

Attitudes towards disabled people can be largely categorised under (1) perceived competence, (2) fear, (3) otherness and (4) support for equal rights and access in society.

Perceived competence

Negative stereotypes about the competence of disabled people can result in harmful perceptions, such as that they are unable to look after themselves, vulnerable, or unable to work.[8] This can manifest as 'pity' if disabled people are perceived as more dependent and in need of help than others.[9] Such perceptions can lead to unsolicited offers of help, for example, approaching or touching a blind person to guide them across the street. Evidence suggests that confronting such help can have a negative effect on the disabled person in question, who is seen as colder as a result.[10] In more extreme circumstances, perceptions of vulnerability may contribute to violence and hate crimes against disabled people.[11]

Fear

Fear of speaking to or approaching disabled people has been widely documented, although fear-based attitudes are more common for people with conditions relating to

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[8] Wang, K., Walker, K., Pietri, E., & Ashburn-Nardo, L. (2019). Consequences of confronting patronizing help for people with disabilities: Do target gender and disability type matter?. *The Journal of social issues*, *75*(3), 904.
Nario-Redmond, M. R. (2010). Cultural stereotypes of disabled and non-disabled men and women: Consensus for global category representations and diagnostic domains. *British journal of social psychology*, *49*(3), 471-488.

[9] Staniland, L. (2009). Public perceptions of disabled people. *Evidence from the British Social Attitudes Survey*.

[10] Wang, K., Silverman, A., Gwinn, J. D., & Dovidio, J. F. (2015). Independent or ungrateful? Consequences of confronting patronizing help for people with disabilities. *Group Processes & Intergroup Relations*, *18*(4), 489-503.

[11] Quarmby (2008) Getting Away With Murder: Disabled people's experiences of hate crime in the UK

mental health and intellectual difficulties.[12,13,14] People may avoid speaking to disabled people for fear of saying or doing something wrong or for fear of the conversation becoming uncomfortable and awkward. The 2017 British Social Attitudes (BSA) survey finds that 16% of people think of disabled people with discomfort and awkwardness.[15] The true proportion may be higher since explicitly asking people their (socially less desirable) attitudes in a survey is likely to lead to underreporting.

Otherness

Another harmful attitude about disabled people is that they are not the same as 'everyone else' in a way that makes them unable to lead a "normal" life where normal is defined as non-disabled.[16] Perceptions of "social distance" between two identity groups, in terms of how different they are perceived to be, has been well documented as contributing towards prejudice.[17]

Support for equal rights and access in society

In terms of making progress towards equal rights and access in society, support among the general public is important. This might include support for funding to make public buildings more accessible, allocating greater public funds to welfare benefits for disabled people or making reasonable adjustments in the workplace. People who know a disabled person are more likely to think that equal rights for disabled people have not gone far enough.[18]

Implicit attitudes

So far we have described explicit attitudes, which people are consciously aware of and typically self-report in studies.[19] While explicit attitudes are relatively easy to measure, they have limitations: people may be unwilling to divulge their true beliefs because they want to be seen as saying and doing the 'right' thing; or to some extent people may not even be truly aware of their own attitudes, which may only emerge when they find themselves in certain situations.

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[12] Werner, S., Corrigan, P., Ditchman, N., & Sokol, K. (2012). Stigma and intellectual disability: A review of related measures and future directions. *Research in developmental disabilities*, *33*(2), 748-765.
[13] Crisp, A. H., Gelder, M. G., Rix, S., Meltzer, H. I., & Rowlands, O. J. (2000). Stigmatisation of people with mental illnesses. *The British journal of psychiatry*, *177*(1), 4-7.
[14] Sin, C. H., Hedges, A., Cook, C., Mguni, N., & Comber, N. (2009). Disabled People's Experiences of Targeted Violence and Hostility (Research Report 21). *Manchester: Office for Public Management*.
[15] British Social Attitudes. (2017). Documentation of the questionnaire. Available here: https://www.bsa.natcen.ac.uk/media/39277/bsa-35-questionnaire.pdf
[16] Department for Work and Pensions. (2021). Family Resources Survey: financial year 2019 to 2020.
[17] Scacco, A., & Warren, S. S. (2018). Can social contact reduce prejudice and discrimination? Evidence from a field experiment in Nigeria. *American Political Science Review*, *112*(3), 654-677.
[18] Scope (2018). The disability perception gap.
[19] Wilson, M. C., & Scior, K. (2015). Implicit attitudes towards people with intellectual disabilities: Their relationship with explicit attitudes, social distance, emotions and contact. *PloS one*, *10*(9), e0137902.

Implicit attitudes, on the other hand, refer to unconscious attitudes that reflect the stereotypes and representations we have been exposed to throughout our lives. In research, implicit attitudes are typically measured by the Implicit Association Test (IAT). The IAT requires participants to quickly associate positive or negative concepts with a particular characteristic (e.g. disabled or non-disabled). How quickly associations are made determines whether one has a positive or negative implicit bias towards that characteristic. However, the evidence is inconclusive in terms of the validity of the IAT and whether IAT scores relate to real-world behaviour.[20,21,22]

Implicit attitudes may be more difficult to change. Data analysed between 2007 and 2016 of over 4 million US respondents found that while explicit attitudes about disability improved by 24% over the 10-year period, implicit attitudes remained stable, shifting by less than 5%.[23] In fact, change is so slow that forecasts suggest it could take well over 150 years for implicit biases against disabled people to reach neutrality.

Messages expected to have a positive effect

Things in common

Evoking common identities is a popular strategy in the prejudice reduction literature, such as highlighting shared values, behaviours, experiences or other identities.[24,25,26] It is also a common approach in mass media campaigns to improve attitudes toward disabled people.[27,28] It is thought to be effective because it makes an out-group (members of a different group) more relatable to the in-group (members of one's own group). However, there is no evidence to understand the impact on attitudes towards disability. There is a potential risk that emphasising things in common in a particular way could reduce support for policies that address structural inequities, such as increased resources or services to remove the barriers disabled people face or making reasonable adjustments in the workplace.

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[20] Kurdi, B., Seitchik, A. E., Axt, J. R., Carroll, T. J., Karapetyan, A., Kaushik, N., ... & Banaji, M. R. (2019). Relationship between the Implicit Association Test and intergroup behavior: A meta-analysis. *American psychologist*, *74*(5), 569.

[21] Oswald, F. L., Mitchell, G., Blanton, H., Jaccard, J., & Tetlock, P. E. (2013). Predicting ethnic and racial discrimination: a meta-analysis of IAT criterion studies. *Journal of personality and social psychology*, *105*(2), 171.

[22] Schimmack, U. (2021). The Implicit Association Test: A method in search of a construct. *Perspectives on Psychological Science*, *16*(2), 396-414.

[23] Charlesworth, T. E., & Banaji, M. R. (2019). Patterns of implicit and explicit attitudes: I. Long-term change and stability from 2007 to 2016. *Psychological science*, *30*(2), 174-192.

[24] Trepte, S., & Loy, L. S. (2017). Social identity theory and self-categorization theory. *The international encyclopedia of media effects*, 1-13.

[25] Choi, D. D., Poertner, M., & Sambanis, N. (2019). Parochialism, social norms, and discrimination against immigrants. *Proceedings of the National Academy of Sciences*, *116*(33), 16274-16279.

[26] Schmader, T., Croft, A., Whitehead, J., & Stone, J. (2013). A peek inside the targets' toolbox: How stigmatized targets deflect discrimination by invoking a common identity. *Basic and Applied Social Psychology, 35(1),* 141-149.

[27] Retrieved from https://www.seemescotland.org/

[28] Retrieved from: https://www.wethe15.org/

Humour

Many media campaigns make use of humour.[29,30] Humour can lead to social change if it attracts attention, offers a way into complex issues, dissolves social barriers and encourages message sharing.[31] This ties in with other studies in terms of reducing defensiveness and reducing the perceived social distance between non-disabled and disabled identities. However, there is limited strong evidence specifically understanding the role of humour in changing attitudes towards disabled people, although the evidence that exists suggests it is promising.[32] Humour can be risky as it is difficult to appeal to everyone's sense of humour, potentially resulting in either flat or offensive jokes.

Behaviour change

While many campaigns aim to change attitudes, some focus on changing behaviour.[33,34] Such campaigns typically highlight specific actions relevant to a particular context, which broader evidence from behavioural science suggests is effective at changing behaviour.[35] A wealth of studies show that changing attitudes is often neither necessary nor sufficient for behaviour change.[36] In addition, attitude change may be more difficult than behaviour change and cognitive dissonance (the discomfort one feels when their behaviour and attitudes do not align) could encourage individuals to change their attitudes to align with their behaviour.[37] Targeting behaviour requires taking a context-driven and person-centred approach in order to identify specific actions to encourage, where targeting general attitudes is likely to be too generalised and non-specific to translate into how individuals will treat a disabled person in a given situation. As such, campaigns that target specific behaviours are more likely to have a tangible impact in the daily lives of disabled people.

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[29] Retrieved from: https://www.wethe15.org/
[30] Retrieved from: https://www.scope.org.uk/campaigns/end-the-awkward/
[31] Chattoo, C. B. (2019). A funny matter: Toward a framework for understanding the function of comedy in social change. *Humor*, *32*(3), 499-523.
[32] Smedema, S. M., Ebener, D., & Grist-Gordon, V. (2012). The impact of humorous media on attitudes toward persons with disabilities. *Disability and Rehabilitation*, *34*(17), 1431-1437.
[33] Retrieved from: https://www.scope.org.uk/campaigns/end-the-awkward/
[34] Retrieved from: https://www.time-to-change.org.uk/
[35] Gobet, F., Lane, P. C., Croker, S., Cheng, P. C., Jones, G., Oliver, I., & Pine, J. M. (2001). Chunking mechanisms in human learning. *Trends in cognitive sciences*, *5*(6), 236-243.
[36] Chaiklin, H. (2011). Attitudes, behavior, and social practice. J. Soc. & Soc. Welfare, 38, 31.
Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behavior.
[37] Festinger, L. (1962). Cognitive dissonance. *Scientific American*, *207*(4), 93-106.

Messages expected to have a negative effect

Exceptional positive representation

The dominant way that Paralympians in the 2016 Rio Games were portrayed was as 'superheroes' or 'superhuman'.[38] It might be assumed that a superhuman portrayal is positive because it highlights the achievements of a group that is otherwise underestimated, with the aim of challenging stereotypes that disabled people are less competent. However, whilst there is no experimental evidence that this portrayal has a negative impact, these 'superhuman' messages may have unintended impacts.

Paralympians are not necessarily representative of other disabled people, just as Olympians are unrepresentative of non-disabled people. It has been argued that if Paralympians are seen as typical of disabled people, there is a risk that people will assume that all disabled people could achieve what Paralympians do if they just applied themselves; this could make non-disabled people less accepting of impairments and the adjustments disabled people may need.[39] In addition, if we see Paralympians as exceptional, this protects the original stereotype of ordinary disabled people as less competent.[40] This means that although positive media exposure may improve attitudes towards those few high-profile disabled individuals, it may not change attitudes towards the group as a whole.

While it is difficult to assess the exact impact of 'superhuman' messages on attitudes towards disabled people, the portrayal of Paralympians as 'superhumans' is generally disliked by the disability activist community with mixed views among disabled people. Research by the English Federation of Disability Sport found mixed views of 'superhuman' and 'hero' among disabled people, although 'inspiring' was seen positively for describing disabled athletes.[41] In a similar vein, in a TED talk by the comedian and disability activist Stella Young, she argues that disabled people are seen as inspirational just for carrying out mundane, everyday tasks - what she calls 'inspiration porn'.[42]

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[38] For example, Channel 4's "We're the Superhumans"; Velasco, A. P., Fermino, A. L., Poffo, B. N., & dos Santos, S. M. (2018). Yes, I can: a representação das pessoas com deficiência no videoclipe "We're the Superhumans" do Channel 4. Motrivivência, 30(55), 34-57.

[39] Schalk, S. (2016). Reevaluating the supercrip. *Journal of Literary & Cultural Disability Studies*, *10*(1), 71-86.

McGillivray, D., O'Donnell, H., McPherson, G., & Misener, L. (2021). Repurposing the (super) crip: media representations of disability at the Rio 2016 Paralympic Games. *Communication & Sport*, *9*(1), 3-32.

[40] Silva, C. F., & Howe, P. D. (2012). The (in) validity of supercrip representation of Paralympian athletes. *Journal of Sport and Social Issues*, 36(2), 174-194.

[41] Marl, S., & Wicks, H. (2016). English Federation of Disability Sport–Media research report.

[42] Young, S. (2014). I'm not your inspiration, thank you very much. *TED talk*. Retrieved from: https://www.ted.com/talks/stella_young_i_m_not_your_inspiration_thank_you_very_much?language=en#t-157318

Highlighting injustice

Emphasising injustice or disadvantages faced by disabled people could potentially change attitudes by increasing empathy, however, there is little evidence for this, particularly regarding disability. Weak evidence finds only a short-lived impact on attitudes towards disabled people.[43] At the same time, it is plausible that messaging focused on the disadvantages faced by disabled people could result in pity, especially if non-disabled people feel they have no control over the cause.[44] Eliciting pity is likely to reinforce the stereotype of lower competence.[45] Such messaging may also elicit negative emotions and people are motivated to avoid information that induces negative emotions.[46,47] Furthermore, it could increase perceptions of distance between the non-disabled and disabled identity, increasing in-group bonding for the non-disabled and further 'othering' of disabled people.[48] For these reasons, it is worthwhile evaluating the impact of highlighting injustice since it is also a common activist approach.

Perspective-taking

"Perspective-taking" is a popular strategy for changing attitudes, where individuals engage in exercises to imagine the perspective of someone different to them. While perspective-taking has been studied for attitudes towards a range of groups, there is little to no evidence looking at its impact on attitudes towards disability.[49] The evidence, primarily based on online experiments, suggests that perspective-taking can reduce the tendency for stereotyping and prejudice.[50] However, research conducted by BIT suggests this is highly context-specific, and that if an individual

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[43] Walker, J., & Scior, K. (2013). Tackling stigma associated with intellectual disability among the general public: A study of two indirect contact interventions. *Research in developmental disabilities*, *34*(7), 2200-2210.

[44] Weiner, B., Graham, S., & Chandler, C. (1982). Pity, anger, and guilt: An attributional analysis. Personality and Social Psychology Bulletin, 8(2), 226-232.

[45] Cuddy, A. J., Fiske, S. T., & Glick, P. (2008). Warmth and competence as universal dimensions of social perception: The stereotype content model and the BIAS map. Advances in experimental social psychology, 40, 61-149.

[46] Kamenetsky, S. B., Dimakos, C., Aslemand, A., Saleh, A., & Ali-Mohammed, S. (2016). Eliciting help without pity: the effect of changing media images on perceptions of disability. Journal of social work in disability & rehabilitation, 15(1), 1-21.

[47] Golman, R., Hagmann, D., & Loewenstein, G. (2017). Information avoidance. Journal of Economic Literature, 55(1), 96-135.
Sharot, T., & Sunstein, C. R. (2020). How people decide what they want to know. Nature Human Behaviour, 4(1), 14-19.

[48] Scacco, A., & Warren, S. S. (2018). Can social contact reduce prejudice and discrimination? Evidence from a field experiment in Nigeria. *American Political Science Review*, *112*(3), 654-677.

[49] Bohnet, I. (2016). What works: Gender equality by design. Harvard university press.
Adida, C. L., Lo, A., & Platas, M. R. (2018). Perspective taking can promote short-term inclusionary behavior toward Syrian refugees. Proceedings of the National Academy of Sciences, 115(38), 9521-9526.

[50] Batson, C. D., Early, S., & Salvarani, G. (1997). Perspective taking: Imagining how another feels versus imaging how you would feel. Personality and social psychology bulletin, 23(7), 751-758.
Todd, A. R., Bodenhausen, G. V., Richeson, J. A., & Galinsky, A. D. (2011). Perspective taking combats automatic expressions of racial bias. Journal of personality and social psychology, 100(6), 1027.

engaging in the exercise is not really able to adopt another perspective it could even have a negative effect, due to stereotype activation or defensiveness.[51] It may still be worthwhile evaluating to understand whether it has promise for attitudes towards disability.

It is important to note that perspective-taking is different to “disability simulation”, which is where non-disabled people undertake activities with physical barriers or inhibitors in place to simulate the effect of a physical disability. The evidence for this is mixed with different studies finding different effects, which is likely because the evidence is generally weak and of poor quality. Importantly, it seems that although it can increase empathic concern, this is likely to be accompanied with pity and reduced perceptions of competence.[52] Most studies use small samples, rely only on self-reported attitudes and do not compare outcomes to a comparison group, which means that the causal impact of the simulation approach cannot be assessed.

Factual

While there is no evidence directly from the disability literature on whether providing facts is an effective tool to improve attitudes, it has been established in the wider literature that personal stories are often more persuasive than arguments, facts or statistics.[53] Personal stories are likely to be more effective because it is harder to emotionally engage with the people behind numbers and statistics, whereas stories typically centre the lived experience of one or a few specific people.[54] Indeed, it has been well documented that individuals are more likely to donate to charitable causes when presented with stories rather than statistics, because they are more likely to evoke powerful emotions, the perceived impact of helping seems greater and their sense of responsibility feels larger.[55] Similarly, while generalised statistics can be doubted and countered with other statistics, first-hand individual experiences are hard to dispute.[56]

A recent meta-analysis found that in studies comparing stories with statistical arguments, stories are more effective when emotional engagement is high, but less

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[51] Likki, T., Londakova, K., & Ter Meer, J. Improving the relationship between line managers and female staff: Testing a perspective.

[52] Ando, S., Clement, S., Barley, E. A., & Thornicroft, G. (2011). The simulation of hallucinations to reduce the stigma of schizophrenia: A systematic review. Schizophrenia Research, 133(1-3), 8-16.
Flower, A., Burns, M. K., & Bottsford-Miller, N. A. (2007). Meta-analysis of disability simulation research. Remedial and Special Education, 28(2), 72-79.
Nario-Redmond, M. R., Gospodinov, D., & Cobb, A. (2017). Crip for a day: The unintended negative consequences of disability simulations. Rehabilitation psychology, 62(3), 324.

[53] Freling, T. H., Yang, Z., Saini, R., Itani, O. S., & Abualsamh, R. R. (2020). When poignant stories outweigh cold hard facts: A meta-analysis of the anecdotal bias. *Organizational Behavior and Human Decision Processes*, 160, 51-67.

[54] Lee, S., & Feeley, T. H. (2016). The identifiable victim effect: a meta-analytic review. Social Influence, 11(3), 199-215.

[55] Lee, S., & Feeley, T. H. (2016). The identifiable victim effect: a meta-analytic review. Social Influence, 11(3), 199-215.

[56] Kubin, E., Puryear, C., Schein, C., & Gray, K. (2021). Personal experiences bridge moral and political divides better than facts. *Proceedings of the National Academy of Sciences*, *118*(6).

effective when emotional engagement is low.[57] Emotional engagement is higher in contexts where the recipient perceives the message as threatening, which could include to their autonomy and their sense of identity ('I'm a good person'), which is often predicated on their beliefs and attitudes.[58] Therefore, campaigns that seek to change and challenge attitudes towards disability among those who hold negative attitudes are likely to be more successful using stories.

Stories are particularly effective if they can trigger self-persuasion, where individuals may be captured by a story combined with open questions such that they begin to construct their own arguments.[59,60,61]

2.3 Expert consultation

We consulted with two experts: an academic expert in attitudes towards disability and an expert from a national UK mental health charity. The academic expert highlighted that there are different types of negative attitudes. They also said that there are different types of audiences - non-disabled people, disabled people and disability activists - and that these audiences may think differently about disability and may perceive campaign messages differently.

Our second expert highlighted that the significant turnaround in attitudes towards mental health since the 90s required a major investment over decades. Campaigns they have worked on were driven by data and evidence and used narratives and personal stories to challenge attitudes towards disabled people. In particular, they aimed to give the people providing their stories a platform. Finally, they targeted and tailored campaign content to specific audiences to make them more effective, for example, young men.

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[57] Freling, T. H., Yang, Z., Saini, R., Itani, O. S., & Abualsamh, R. R. (2020). When poignant stories outweigh cold hard facts: A meta-analysis of the anecdotal bias. *Organizational Behavior and Human Decision Processes*, 160, 51-67.

[58] Hopkins, D. J., Sides, J., & Citrin, J. (2019). The muted consequences of correct information about immigration. *The Journal of Politics*, *81*(1), 315-320.
Kalla, J. L., & Broockman, D. E. (2020). Reducing exclusionary attitudes through interpersonal conversation: Evidence from three field experiments. *American Political Science Review*, *114*(2), 410-425.

[59] Kalla, J. L., & Broockman, D. E. (2020). Reducing exclusionary attitudes through interpersonal conversation: Evidence from three field experiments. American Political Science Review, 114(2),

[60] Glock, S., Müller, B. C., & Ritter, S. M. (2013). Warning labels formulated as questions positively influence smoking-related risk perception. Journal of health psychology, 18(2), 252-262.

[61] Müller, B. C., Ritter, S. M., Glock, S., Dijksterhuis, A., Engels, R. C., & van Baaren, R. B. (2016). Smoking-related warning messages formulated as questions positively influence short-term smoking behaviour. Journal of health psychology, 21(1), 60-68.

3. Method

3.1 Materials development

Desk research

We carried out desk research looking for real campaign material that we could use to base the messages on in order to make them a realistic reflection of the kinds of messages campaigners would use.

Co-design with Scope staff

BIT ran a co-design workshop with 7 Scope staff from their research and evaluation, marketing and comms teams to iterate and improve the 8 campaign messages that were being explored at the time to make them more effective.

During the workshop, Scope ranked each of the 8 messages, with 1 being the message they thought would be most effective at changing attitudes, and 8 being the least. Table 1 below shows how each message was ranked by Scope staff.

Table 1. Scope staff's rankings of each message

Rank	**Message type**
1	Things in common
2	Narratives (since dropped)
3	Humour
4	Behaviour change
5	Highlighting injustice
6	Factual
7	Exceptional positive representation
8	Perspective-taking

As a result of the co-design workshop, it was decided that most of the message types would have a narrative form apart from 'factual', so there was no need to have a separate 'narratives' message.

Co-design with disabled people

BIT ran a co-design workshop with 5 disabled people: 2 men, 2 women and 1 individual who preferred not to disclose their gender. The co-design workshop

wanted to understand disabled people's expected impact of the campaign messages on attitudes towards disability, and receive their input on the messages to better design them.

The co-design workshop participants generally felt quite positively about the 'exceptional positive representation', 'things in common', 'perspective-taking' and 'behaviour change' messages. They had more mixed reactions to the 'highlighting injustice', 'factual' and 'humour' messages.

See Table A1.1.1 in Appendix 1 for the co-design workshop participants' perceived impact of each message and Table A1.1.2 in Appendix 1 for the co-design workshop participants' general feedback for each message, and any changes made based on the feedback.

3.2 Experimental design

Using BIT's online experiment platform, we ran a randomised controlled trial (RCT) to test the impact of 7 different messages against a control (participants did not see a message, but completed the rest of the survey) on public attitudes towards disabled people.[62]

3.3 Description of data and sample

We recruited 5,498 participants: 659-717 participants per condition. The sample was nationally representative in terms of gender, region, ethnicity, income, education and age for the UK population.[63] The sample underrepresented people in employment (63% vs 76% in the population).

The sample was representative of disabled people (24%). The Labour Force Survey two-part question for disability was used. This aligns with how disability is defined by the Equality Act 2010 and with the Government Statistical Service's harmonised definition:[64]

- Do you have any physical or mental health conditions or illnesses lasting or expected to last 12 months or more? (Yes/No)
- [If yes] Do any of your conditions or illnesses reduce your ability to carry out day-to-day activities? (Yes, a lot / Yes, a little / Not at all)

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[62] A randomised controlled trial is an experimental design where two or more groups of participants are randomly assigned to receive an intervention or not (the 'control' group'). The control group enables comparison of the impact of intervention(s) against what would have happened if nothing had changed. Random assignment reduces the role of selection bias, helping to ensure that groups of participants are as similar as possible. Therefore, the only differences observed between the two groups should be due to the intervention, establishing the causal role of the intervention.
[63] Representative is defined as within 3 percentage points of the distribution in the population
[64] ONS (2019) Improving disability data in the UK: 2019

Responding ‘Yes, a lot’ or ‘Yes, a little’ defined the participant as a disabled person.

Balance checks

We performed balance checks to make sure that participants in each of the 8 conditions was representative in terms of these covariates: gender, age categories (18-24; 25-34; 35-44; 45-54; 55-64, 65+), disability status, income,[65] ethnicity,[66] and education.[67] There was no evidence of covariate imbalance at the 10% level.

Attrition

The number of people dropping out during the experiment did not differ by condition ($\chi 2 = 9.4$, $p = 0.23$), but did differ by disability status ($\chi 2 = 43.4$, $p < 0.01$). Specifically, non-disabled participants were more likely to drop out (20% attrition) than disabled participants (12%). However, those who responded “Yes, a lot” to a question about the extent of their disability were significantly more likely to drop out (15%), than those who said “Yes, a little” (11%) ($p < 0.05$).

3.4 Participant journey

The participant journey (Figure 1) was as follows:

1. Eligibility: Participants were adults living in England or Wales.
2. Randomisation: Participants were randomly assigned to see either no message or one of the seven message versions.
3. Message: Each intervention condition showed participants a different message. Participants were able to spend as much time as they wanted viewing the message. The control group did not see a message.
4. Approval and sentiment towards message: Participants in all the intervention groups were shown the message again and were then asked to state how they felt about this message.
5. Attitudes towards disability: Participants were asked a series of questions about their attitudes towards disabled people.
6. Demographics: Participants were asked to provide their gender, region, ethnicity, income, education, age, disability and employment status.
7. Implicit Association Test (IAT): Participants were then asked to complete the disability IAT (described in more detail in the ‘Outcome measures’ section).

See Figure 1 for a diagram of the participant journey including the number of participants in each condition. Conditions are numbered as follows in Figure 1:

(1) Things in common

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[65] Income is defined as above/ below median household income

[66] Ethnicity is defined as white/ ethnic minority

[67] Education is defined as higher/ lower .‘Below O-level/GCSE’, ‘O-levels/GCSEs or equivalent’, ‘A-levels or equivalent’ and ‘completed some university, but no degree’ were classified as lower. ‘University degree’, ‘Master's or professional degree’, ‘Post graduate: PhD’ were classified as higher.

(2) Humour
(3) Behaviour change
(4) Exceptional positive representation
(5) Highlighting injustice
(6) Perspective-taking
(7) Factual

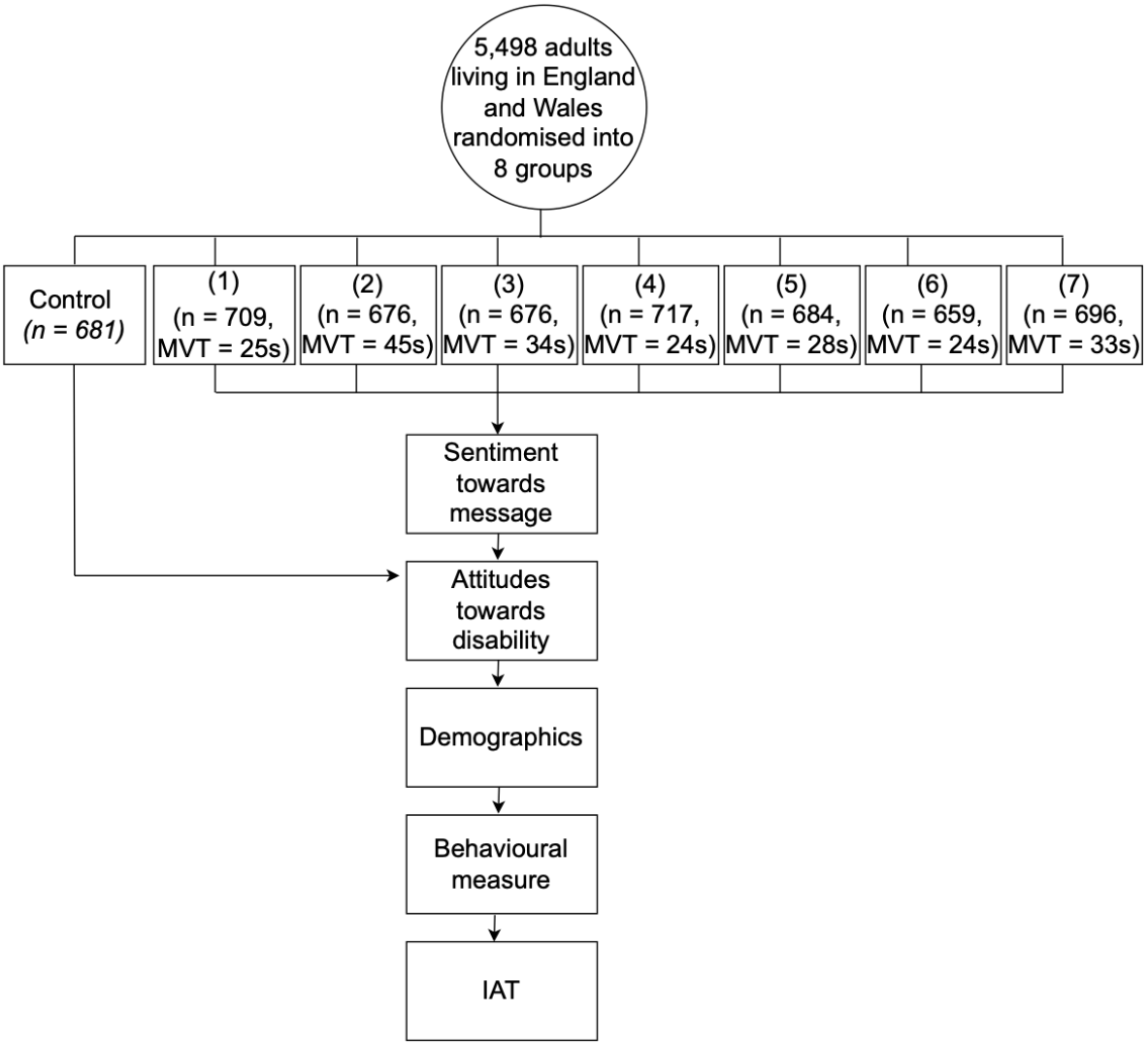


Figure 1. Participant journey. Sample size (n) and median viewing time (MTV) provided for each condition.

Participants took a median average of 10 minutes and 15 seconds to complete the survey.

3.5 Experimental Conditions

The messages were adapted from real campaign text incorporating input from the co-design workshops and adapted to make sure they emphasised the specific

message type we wanted to test. References to specific impairments and conditions were removed and replaced with “disabled” in order to make the findings applicable to disability in general. The final message types that tested in the experiment were:

- **Things in common:** the message emphasised everyday common activities and identities shared between disabled and non-disabled people
- **Humour:** the message used humour to demonstrate the impact of being disabled
- **Behaviour change:** the message highlighted specific actions that can be taken to assist a disabled person if needed
- **Exceptional positive representation:** the message portrayed an exceptional disabled athlete and described her as ‘superhuman’
- **Highlighting injustice:** the message highlighted the disadvantages or injustice faced by disabled people
- **Perspective-taking:** the message asked participants to imagine the perspective of a disabled person
- **Factual:** the message used facts or statistics to demonstrate the impact of being disabled

To see the full messages as presented in the experiment, see Appendix 1.2.

3.6 Outcome measures

We collected data for the following outcome measures:

- **Explicit attitudes:** self-reported attitudes about disabled people. What people say they think.
- **Implicit attitudes:** unconscious attitudes about disabled people that arise automatically.
- **Behaviour:** intentional or actual actions or inaction that might support or undermine disabled people. How people act.
- **Sentiment:** how the message makes a person feel.
- **Approval:** the extent to which participants thought the information in the message they saw helped them understand how disabled people feel, was easy to understand, trustworthy, fits with their beliefs and is something they would like to see in the future.
- **Qualitative:** open, free-text responses about what participants thought of the messages.

Primary outcome measure

- Explicit attitudes towards disabled people (overall)

For further information on the scales used, and for a full list of the survey questions see Appendix 1.3.

Exploratory outcome measures

- **The components of the overall index:**
  - Competence index
  - Fear index
  - Otherness index
  - Support for equal rights index

- **The disability IAT:** Participants were instructed to categorise either 'bad' or 'good' items with symbols representing disabled people and the opposite (either 'good' or 'bad') items with non-disabled people as quickly as they could, and then do the converse. Whether participants started with associating 'good' or 'bad' items with disabled people was randomly assigned. Below are the items and symbols used in the Harvard version of the disability IAT:[68]

Category	**Items**
Good	Triumph, Joyous, Pleasure, Friend, Delightful, Cheer, Appealing, Smiling
Bad	Sadness, Gross, Selfish, Poison, Awful, Abuse, Hatred, Disaster
Disabled People	
Non-Disabled People	

We compared how quickly participants paired 'good' items with symbols representing disabled people versus symbols representing non-disabled people (and likewise with 'bad'). How quickly participants categorise the symbols representing disabled people with the positive items and slowly with negative items estimates whether one has a more positive implicit bias about disabled people.

- **Behaviour:** Proportion of participants who clicked to find out more about what they can do to support equal rights for disabled people

- **Sentiment:** How participants felt about the message.

[68] Disability IAT. Harvard University

- **Approval:** The extent to which participants thought the information in the message they saw helped them understand how disabled people feel, was easy to understand and trustworthy, fits with their beliefs and is something they would like to see in the future.

- **Three words:** Participants were asked “What three words come to mind when you think about the above information?” after reading the message.

Analytical strategy

To measure the impact of the messages, BIT compared the outcomes of participants who viewed each of the 7 messages to those in the control group using linear regression. Responses from disabled people were compared to non-disabled people using separate regressions for disabled and non-disabled people.

The full analytical strategy is available in Appendix 1.4.

4. Results

The ‘perspective-taking’ and ‘exceptional positive representation’ messages improved overall attitudes towards disabled people the most compared to seeing no message at all. None of the messages had a negative impact on overall attitudes towards disabled people.

Throughout the report, levels of significance are referred to in the following ways:

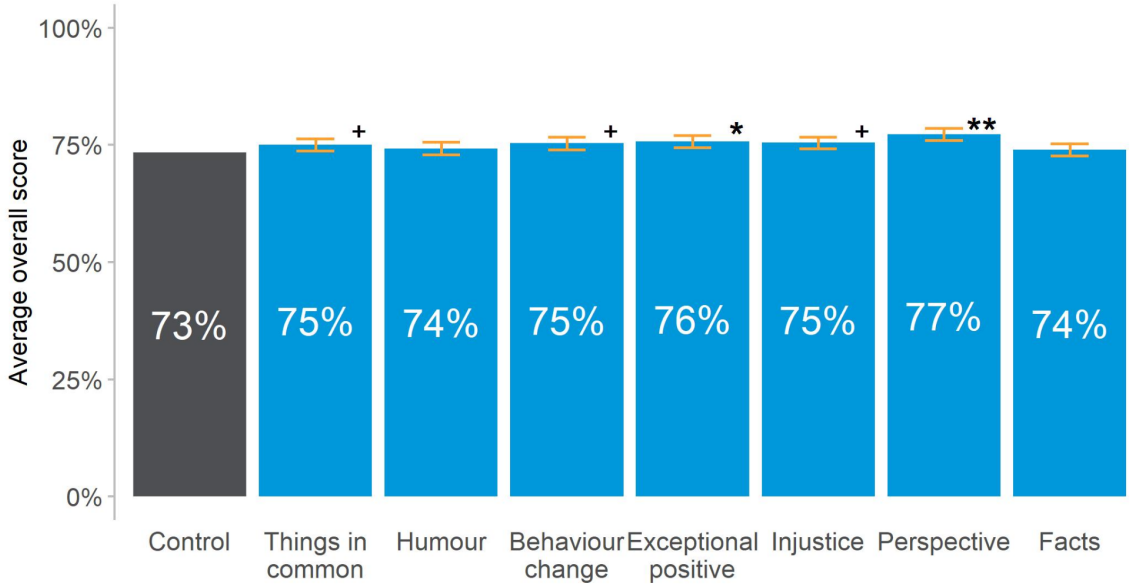
- Highly significant if $p < 0.01$
- Significant if $p < 0.05$
- Marginally significant if $p < 0.10$

Primary analysis: Explicit attitudes overall

Overall attitudes towards disabled people **improved**:

- Highly significantly (4 percentage points) after seeing the ‘perspective-taking’ message.
- Significantly (3 percentage points) after seeing the ‘exceptional positive representation’ message.
- Marginally significantly (2 percentage points) after seeing the ‘things in common’, ‘highlighting injustice’ and ‘behaviour change’ messages.

The rest of the messages did not significantly change overall attitudes towards disability compared to control.



N = 5,498
*** p < 0.01, * p < 0.05, ⁺ p < 0.10*
Primary analysis
Corrected for multiple comparisons

Figure 2. Overall explicit attitudes for all trial arms

Exploratory analysis

The components of the overall index:

- Competence index
- Fear index
- Otherness index
- Support for equal rights index

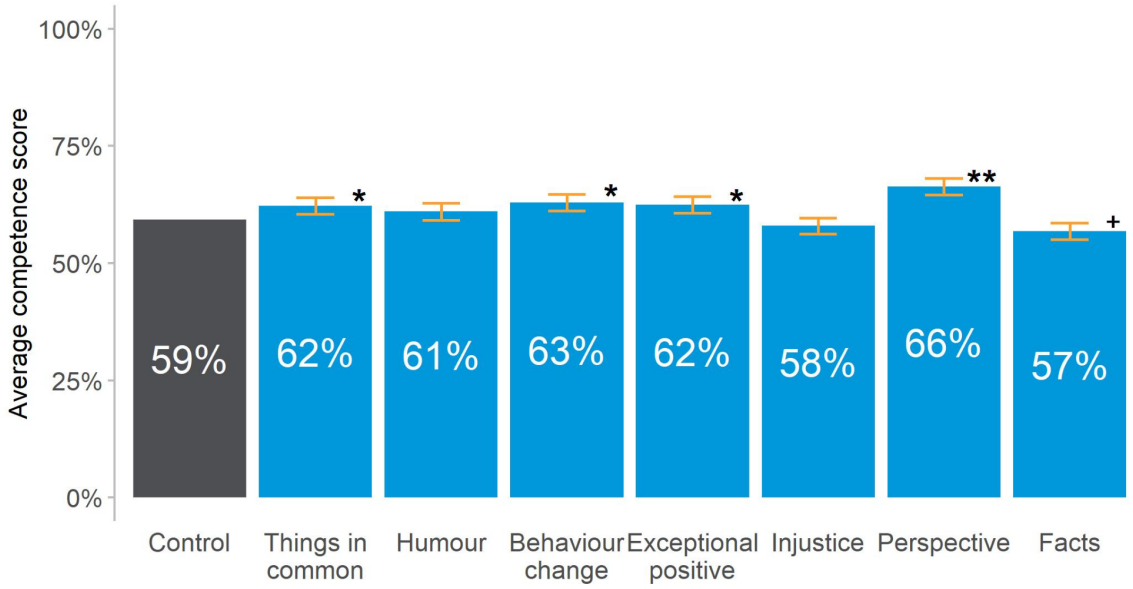
Competence index

The perceived competence of disabled people **increased**:

- Highly significantly (7 percentage points) after seeing the 'perspective-taking' message.
- Significantly after seeing the 'behaviour change' message (4 percentage points), and the 'exceptional positive representation' and 'things in common' messages (both by 3 percentage points).

The 'factual' message significantly **reduced** the perceived competence of disabled people by 2 percentage points.

The 'highlighting injustice' and 'humour' messages did not significantly change perceived competence compared to control.



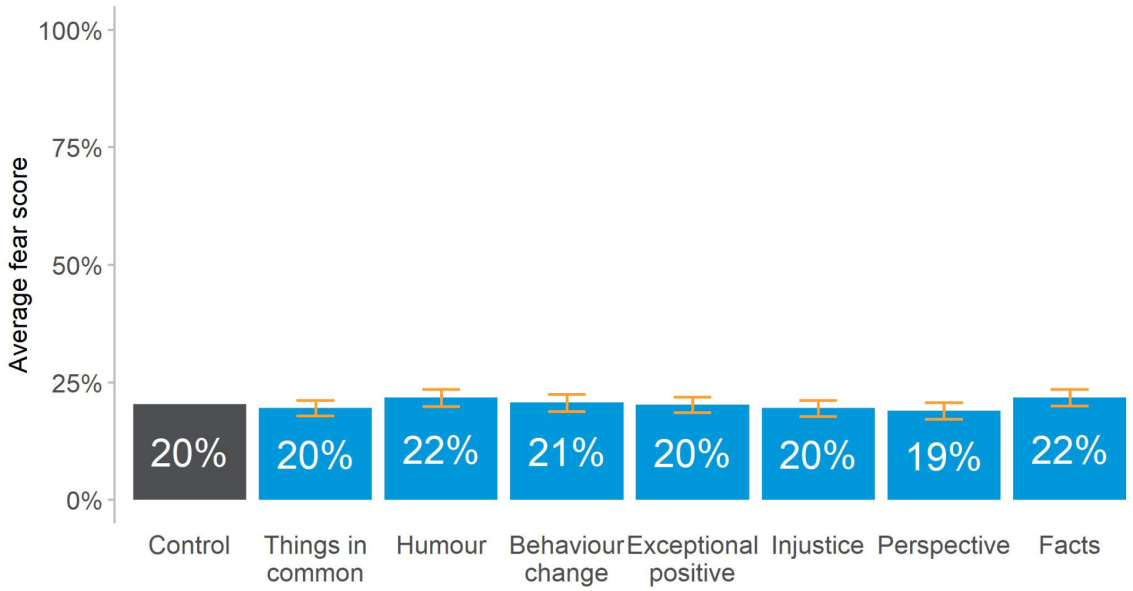
N = 5,498
*** p < 0.01, * p < 0.05, ⁺ p < 0.10*
Exploratory analysis
Corrected for multiple comparisons

Figure 3. Competence index score for all trial arms

A full table of the impact of the messages on each of the competence items is in Appendix 2.1 (Table A2.1.1.)

Fear index

None of the messages statistically significantly changed perceived fear of disabled people compared to control.



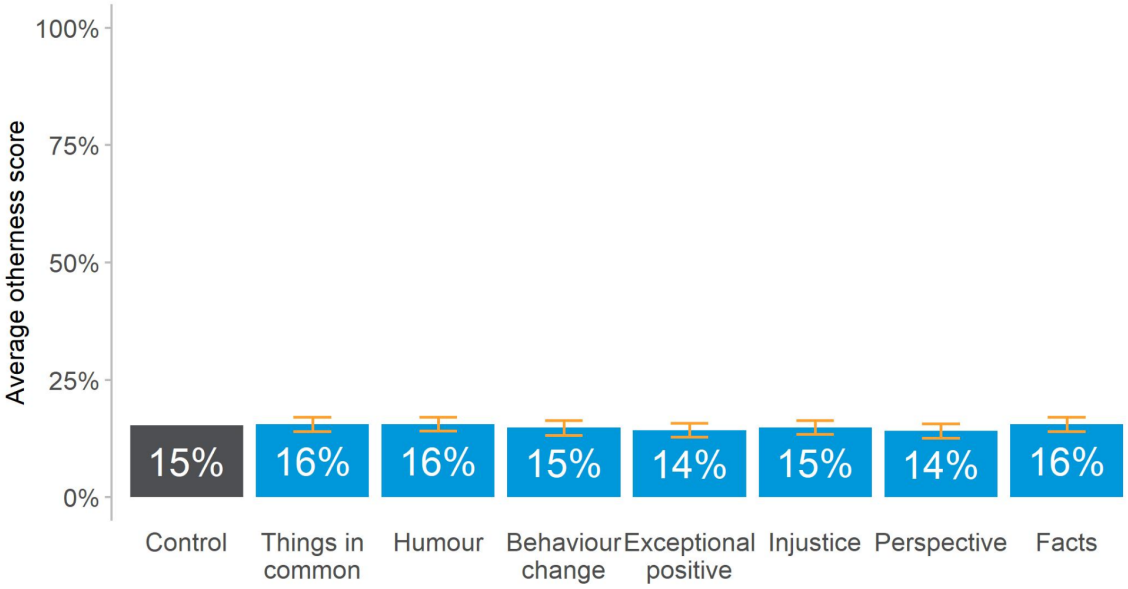
N = 5,498
*** p < 0.01, * p < 0.05, ⁺ p < 0.10*
Exploratory analysis
Corrected for multiple comparisons

Figure 4. Fear index score for all trial arms

A full table of the impact of the messages on each of the fear items is in Appendix 2.1 (Table A2.1.2.).

Otherness index

None of the messages significantly changed the perceived otherness of disabled people compared to the control.



N = 5,498
*** p < 0.01, * p < 0.05, ⁺ p < 0.10*
Exploratory analysis
Corrected for multiple comparisons

Figure 5. Otherness index score for all trial arms

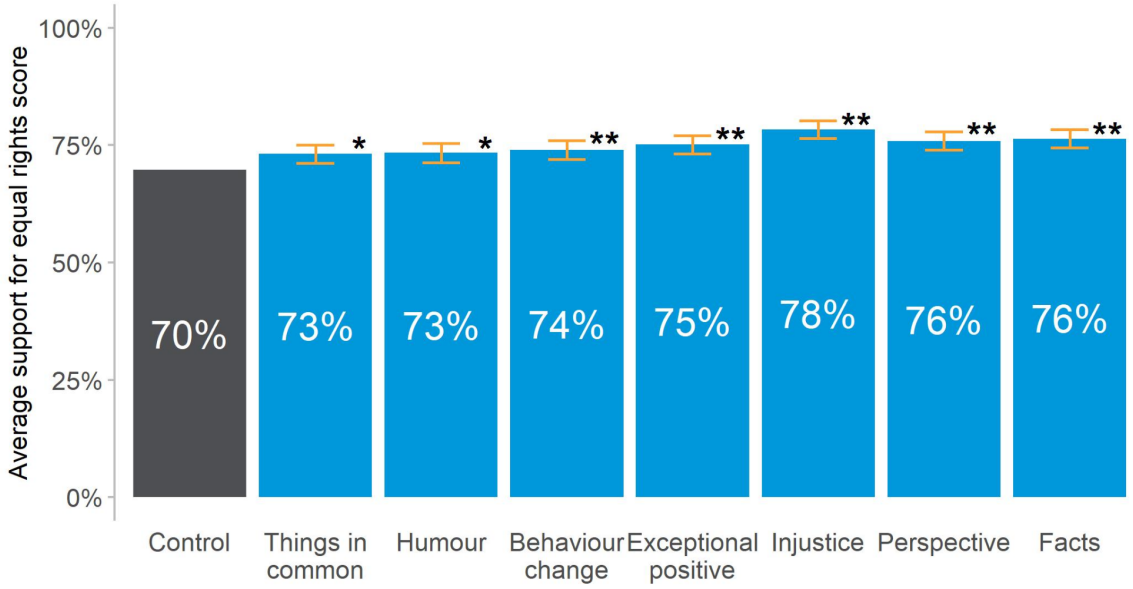
A full table of the impact of the messages on each of the otherness items is in Appendix 2.1 (Table A2.1.3.)

Support for equal rights index

All of the messages significantly **increased** support for equal rights compared to control.

Support for equal rights for disabled people **increased**:

- Highly significantly after seeing the ‘highlighting injustice’ message (8 percentage points), ‘perspective-taking’ and ‘factual’ messages (both by 6 percentage points), the ‘exceptional positive representation’ message (5 percentage points), and the ‘behaviour change’ message (4 percentage points).
- Significantly (3 percentage points) after seeing the ‘things in common’ and ‘humour’ messages.



N = 5,498
*** p < 0.01, * p < 0.05, ⁺ p < 0.10*
Exploratory analysis
Corrected for multiple comparisons

Figure 6. Support for equal rights index for all trial arms

A full table of the impact of the messages on each of the support for equal rights items is in Appendix 2.1 (Table A2.1.4.).

Summary of explicit attitudes findings

For a summary of the explicit attitudes findings, see Table 2 below. Conditions are numbered as follows:

(1) Things in common
(2) Humour
(3) Behaviour change
(4) Exceptional positive representation
(5) Highlighting injustice
(6) Perspective-taking
(7) Factual

Table 2. Summary of the findings for each of the explicit attitudes indices for all trial arms

Explicit attitudes indices	**Control**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Overall	73%	75%$^{+}$	74%	75%$^{+}$	76%*	75%$^{+}$	77%**	74%
Competence	59%	62%*	61%	63%*	62%*	58%	66%**	57%$^{+}$
Fear	20%	20%	22%	21%	20%	20%	19%	22%
Otherness	15%	16%	16%	15%	14%	15%	14%	16%
Support for equal rights	70%	73%*	73%*	74%**	75%**	78%**	76%**	76%**

N = 5,498

*** p < 0.01, * p < 0.05, $^{+}$ p < 0.10*

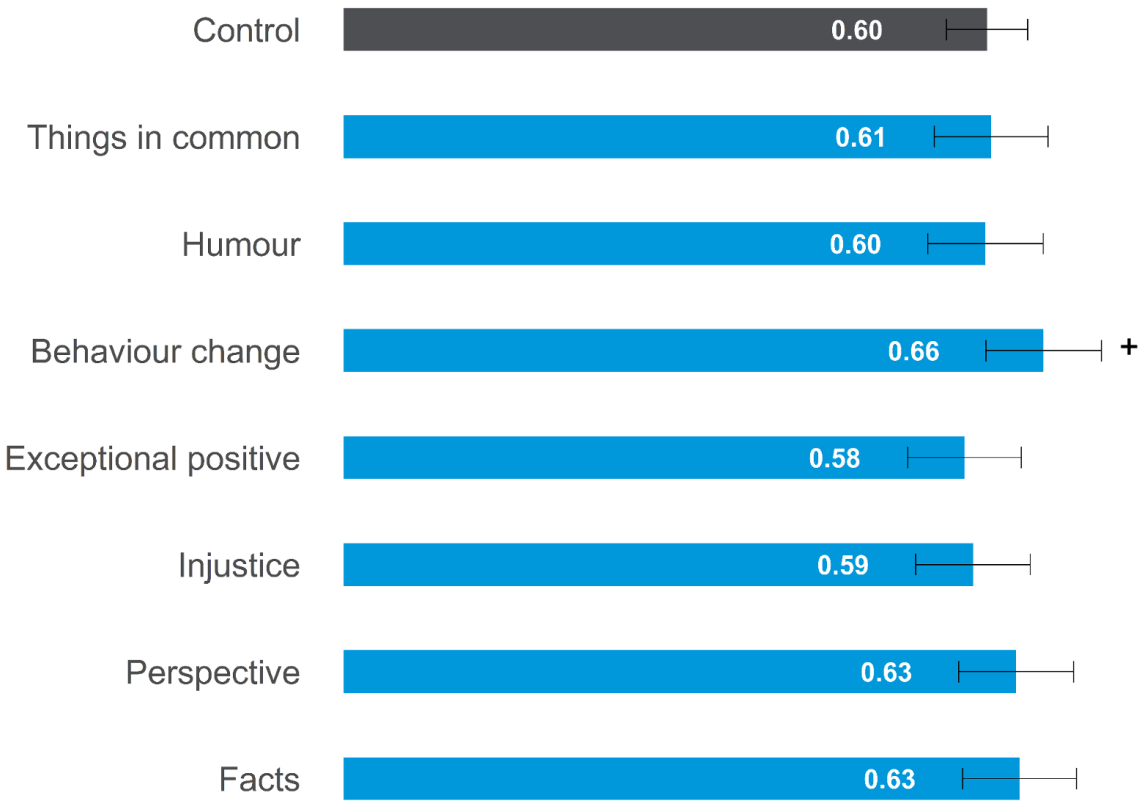
***Green shading** identifies outcomes which significantly improved in comparison to 'Control'*

***Red shading** identifies outcomes which significantly worsened in comparison to 'Control'*

Implicit attitudes

The vast majority (90%) of participants had a score higher than 0, indicating a negative bias towards disabled people. This means that participants reacted faster to negative words when they were paired with symbols representing disabled people than symbols representing non-disabled people (and vice versa for positive words).

None of the messages significantly improved participants' implicit attitudes. The 'behaviour change' message marginally significantly **worsened** implicit attitudes towards disabled people.



The higher the score, the more negative bias towards disabled people.
N = 5,498
*** p < 0.01, * p < 0.05, + p < 0.10*
Exploratory analysis, not corrected for multiple comparisons

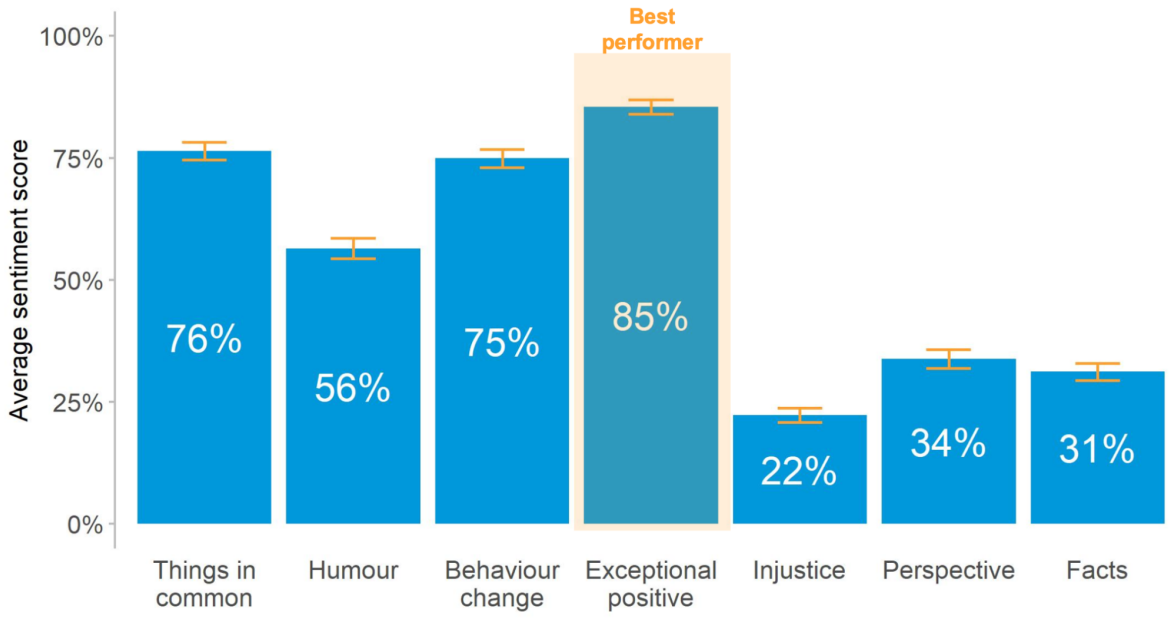
Figure 7. Average Implicit Association Test score for each trial arm.

Behaviour

The ‘perspective-taking’ and ‘humour’ messages marginally significantly **increased** the proportion of participants who clicked to find out more about what they can do to support equality for disabled people (see Table A2.1.5. in Appendix 2.1 for more details).

Sentiment

The ‘exceptional positive representation’ message achieved the most positive sentiment in that it achieved the highest score and the rest of the messages were significantly lower.



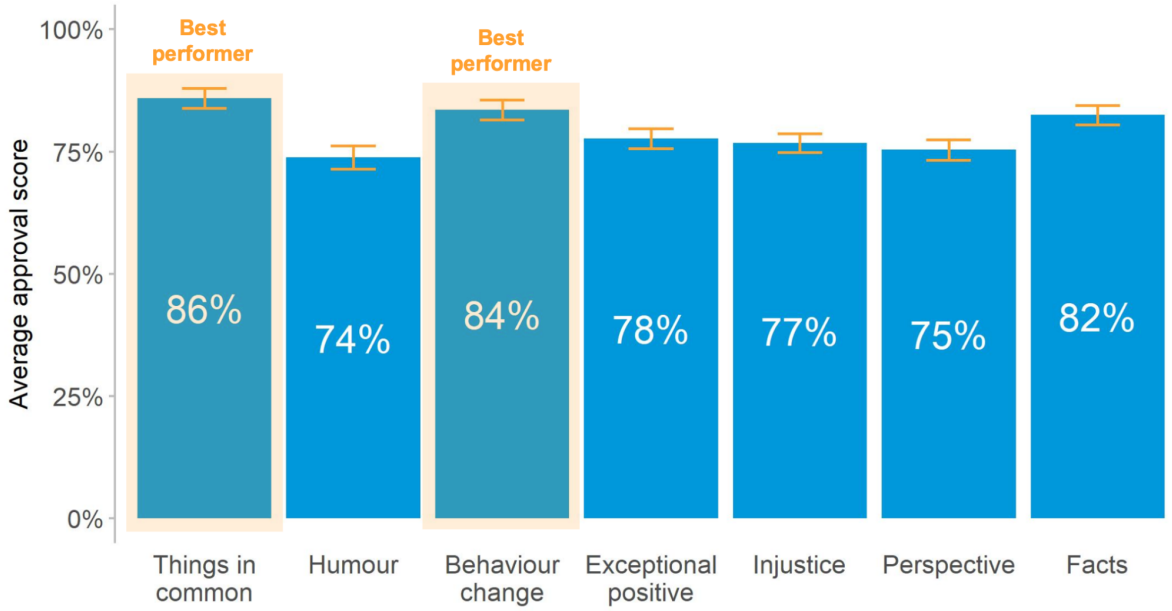
N = 4,817
Exploratory analysis
Not corrected for multiple comparisons

Figure 8. Sentiment for all trial arms

A full table of the impact of the messages on each of the sentiment items is in Appendix 2.1 (Table A2.1.6.).

Approval

Approval was greatest in both ‘things in common’ and ‘behaviour change’ arms in that the ‘things in common’ message was the highest performer and the ‘behaviour change’ message was not significantly different.



N = 4,817
Exploratory analysis
Not corrected for multiple comparisons

Figure 9. Approval for all trial arms

A full table of the impact of the messages on each of the approval items is in Appendix 2.1 (Table A2.1.7.).

Subgroup analysis by disability

When comparing responses by disability, the intervention messages more strongly improved attitudes among non-disabled people than disabled people in the overall index, competence index and equality index. Disabled people had more positive attitudes in control than non-disabled participants, and their attitudes were less likely to change in response to the messages.

There were some negative effects for disabled people. The ‘humour’, ‘behaviour change’ and ‘factual’ messages increased the proportion of disabled participants who stated they thought of disabled people with fear. The ‘factual’ message also decreased perceived competence of disabled people among disabled participants. This was not the case for non-disabled participants (see Table A2.1.8. in Appendix 2.1 for more details).

Qualitative results

Three words

The most common words that participants wrote when thinking about the information in the messages were ‘sad’ (appeared 655 times) and ‘inspired’ or ‘inspirational’ (223 times). ‘Sad’ appeared the most in the ‘highlighting injustice’ arm (259), followed by

the ‘factual’ (150) and ‘perspective-taking’ (135) arms. ‘Inspiring/inspirational’ appeared most in the ‘exceptional positive representation’ arm (162).

A full table of the number of times each word appeared in each of the arms is in Appendix 2.1 (Table A2.1.9.).

5. Discussion

The most successful message was the ‘perspective-taking’ message. This message improved attitudes in the overall index to the greatest extent, as well as improving the competence index and support for equality index. It also increased the likelihood that participants would click on a link to find out more about how to support equality for disabled people. Following that was the ‘exceptional positive representation’ message, which also improved all those indices, but did not change the likelihood of clicking on the link. None of the messages changed scores on the fear or otherness indices. All of the messages increased support for equal rights compared to control. Nearly all the messages had no impact on implicit attitudes, apart from the ‘behaviour change’ message, which had a negative impact. There were stronger and more positive effects for non-disabled people than disabled people, mainly due to the fact that disabled participants had more positive attitudes to start with.

Perspective-taking was the strongest performing message

Contrary to expectations, ‘perspective-taking’ was the strongest performing message in terms of improving explicit attitudes towards disabled people. This was driven by increasing the perceived competence of disabled people and support for equal rights. This message also increased the likelihood that people would click on further information about how to support equality for disabled people, suggesting that it might be effective in online campaigns that ask people to click on further content. This finding adds to the existing perspective-taking literature which has focused on other marginalised groups by suggesting it can also be effective for changing attitudes towards disabled people.[69]

The perspective-taking literature has some inconsistent findings and we believe this may be due to the **type of perspective** the participant is asked to imagine. Where research finds that perspective-taking does not work or has a negative effect, it might be due to asking people to imagine a perspective that they do not have access to, for example, asking people to imagine *being disabled* or *being from* a given marginalised group.[70] However, the message that was tested primarily asked readers to imagine being treated unfairly due to being disabled. Most people have likely experienced unfair treatment to some extent and so this may make it less likely to have a negative effect. This also makes it different from “disability simulation” exercises where non-disabled people undertake activities with physical barriers or inhibitors in place to simulate the effect of a physical disability, which are more likely to have a negative effect.[71]

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[69] For example, Todd, A. R., Bodenhausen, G. V., Richeson, J. A., & Galinsky, A. D. (2011). Perspective taking combats automatic expressions of racial bias. Journal of personality and social psychology, 100(6), 1027.

[70] Likki, T., Londakova, K. & Meer, J. T. (2017). Improving the relationship between line managers and female staff: Testing a perspective.

[71] Flower, A., Burns, M. K., & Bottsford-Miller, N. A. (2007). Meta-analysis of disability simulation research. Remedial and Special Education, 28(2), 72-79.

In this specific message, participants were asked to imagine being a named individual ('Sarah') after recounting her personal story, rather than being an unnamed disabled person or imagining a general disabled experience. Personal stories from named individuals are more persuasive, so this may have also made it more effective.[72] By asking participants to imagine how they would feel if they were Sarah, the message may have triggered 'self-persuasion', which has been shown to be effective in reducing prejudice.[73] It is possible that the focus on Sarah may not have appealed to all participants. Future research should understand the impact of using a range of perspective-taking stories across a range of contexts and audiences.

Interestingly, all the disabled people taking part in the co-design workshop felt that this message would be effective as they felt that it "walk[ed] people through a journey of an experience of a disabled person" and that it brought "disability to life". This further highlights the importance of personal stories, without which the perspective-taking approach may not have been effective. In the co-design workshop with Scope staff, they predicted that this would be one of the least effective messages, which was probably with the knowledge that "disability simulation" can have a negative effect. This highlights the importance of understanding precisely what drives the specific effect of an intervention.

Exceptional positive representation also performed well

Also contrary to expectations, the second most effective message was the 'exceptional positive representation' message, which improved overall attitudes, driven by competence and support for equality. However, it did not increase the likelihood that participants would click on further information. It is not clear whether the positive representation of the individual needs to be 'exceptional' to be effective. The strongly positive effect of the perspective-taking message, which included an 'unexceptional' positive representation, suggests that the representation perhaps does not necessarily need to be exceptional. In both cases, the disabled person is described in a way that attributes status to them. This is likely the key 'positive' element that counteracts negative perceptions about competence. Further research should test the impact of unexceptional positive representations of disabled people to understand this.

None of the concerns about the risks of this message appeared to emerge. Firstly, that it might minimise barriers faced by disabled people and, therefore, reduce support for actions to increase equality and access. This message highly significantly increased support for equality. Secondly, that focusing on an 'exceptional' disabled

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[72] Kubin, E., Puryear, C., Schein, C., & Gray, K. (2021). Personal experiences bridge moral and political divides better than facts. *Proceedings of the National Academy of Sciences*, *118*(6).
[73] Kalla, J. L., & Broockman, D. E. (2020). Reducing exclusionary attitudes through interpersonal conversation: Evidence from three field experiments. American Political Science Review, 114(2),

athlete may not generalise to disabled people. This message significantly increased the perceived competence of disabled people in general.

It is worth noting that the message that was tested did not have some of the components that drive the criticism from disability activists: it did not suggest that the individual had 'overcome' being disabled, it did not imply that the individual was 'better' because they were disabled, or that performing everyday tasks was 'inspiring'. The message that was tested focused on the story and achievement of a disabled athlete. Nonetheless, we would not recommend using the term 'superhuman', which was included to reflect the Channel 4 campaign, as it is unlikely that this drove the effect and it can be received negatively. For example, one participant in the experiment noted "I work in disability activism, and the article at the beginning of the survey is leaning towards inspiration porn - referring to a disabled person as superhuman just because they are able to compete in a sport usually deemed for [non-disabled] people."

Meanwhile, all the disabled people taking part in the co-design workshop felt that this message would be effective as they felt "talking about / amplifying stories about achievement by disabled people … would be positive" and "it shows disabled people don't need to be looked down on". One of the participants acknowledged the criticism of the term 'superhuman', but still liked the overall message, "I know this was not very well received by the disabled community (as in disabled people prefer to be regarded as human, not 'superhuman'), but I personally found it a positive message/campaign, that recognised the achievement of disabled people." This reinforces that positive representation lands well while the use of the term 'superhuman' is best avoided. Scope staff and our team predicted that this message would be the least effective, in large part due to the use of the term 'superhuman'.

The factual and highlighting injustice messages had some expected negative effects

The 'factual' message had no impact on overall attitudes and was the only message to decrease perceived competence. It increased support for equality, as did all messages, but it did not increase the likelihood of clicking on further information. It reinforced stereotypes about disabled people as less competent. It was the only message that decreased perceived competence, driven by how much people said they thought disabled people can take care of themselves and that we should expect just as much from disabled people as from non-disabled people. It was also the only message to marginally significantly worsen an item within the fear index; specifically, thinking of disabled people with discomfort and awkwardness. These findings support the literature that suggests personal stories are more persuasive than facts.[74] This is particularly the case for emotive contexts, such as when an individual

[74] Freling, T. H., Yang, Z., Saini, R., Itani, O. S., & Abualsamh, R. R. (2020). When poignant stories outweigh cold hard facts: A meta-analysis of the anecdotal bias. *Organizational Behavior and Human Decision Processes*, 160, 51-67.

feels threatened, and this message had the highest score in terms of participants feeling guilty.[75]

This finding does not suggest that facts and statistics have no place in campaigns, but highlights the critical importance of building a narrative and using personal stories to make facts or statistics more likely to be persuasive. As such, one of the disabled people in the co-design workshop felt, “I think combining stats with … other techniques is a good way to do it.” Future research should understand the role of facts in stories and how much narrative is required to make facts persuasive, if at all.

The ‘highlighting injustice’ message slightly improved overall attitudes although this was driven by increasing support for equality, which increased across all messages. It did not increase the likelihood of clicking on further information. As predicted, it did potentially reinforce stereotypes of disabled people as less competent, suggesting that it elicited pity.[76] Even though the competence index did not change, it was one of the only two messages (along with ‘factual’) to decrease how much people said they thought disabled people can take care of themselves. As expected, it elicited strong negative emotions: it had the highest score in terms of making people feel sad, concerned and angry, and one of the highest in terms of guilt. This may have led to some avoidance, as predicted in the literature, as it was one of the lowest scoring in terms of whether participants would want to see a message like it again.[77] However, the risk that it would ‘other’ disabled people did not seem to emerge, as there was no change in the otherness index. These findings highlight that not all personal stories are effective. In particular, this message does nothing to raise the status of the disabled person involved. Campaigners should be cautious about the unintended effects of focusing only on disadvantages and injustice.

To manage negative emotions, it might be better to follow highlighting injustice immediately with a solution. For example, a few of the disabled people in the co-design workshop noted that for this to be effective it should either focus on “someone sticking up for them” or tie it to “some kind of nationwide solution”. Future research should explore whether combining this message with a solution would improve attitudes.

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[75] Hopkins, D. J., Sides, J., & Citrin, J. (2019). The muted consequences of correct information about immigration. *The Journal of Politics*, *81*(1), 315-320.
Kalla, J. L., & Broockman, D. E. (2020). Reducing exclusionary attitudes through interpersonal conversation: Evidence from three field experiments. *American Political Science Review*, *114*(2), 410-425.

[76] Cuddy, A. J., Fiske, S. T., & Glick, P. (2008). Warmth and competence as universal dimensions of social perception: The stereotype content model and the BIAS map. Advances in experimental social psychology, 40, 61-149.

[77] Golman, R., Hagmann, D., & Loewenstein, G. (2017). Information avoidance. Journal of Economic Literature, 55(1), 96-135.

The things in common and behaviour change messages did not perform as well as expected

The ‘things in common’ message marginally significantly improved overall attitudes, driven by increased perceived competence and increased support for equality. It did not increase the likelihood of clicking on further information. This message was expected to be one of the strongest performers, but its impact on overall attitudes was only marginally significant. Unlike the ‘perspective-taking’ and ‘exceptional positive representation’ messages, this message did not centre on one individual’s story. It was adapted from a campaign video that showed a wide variety of individuals talking about their everyday experiences. In written form, this meant there was no personal story to relate to, but rather a list of everyday experiences. One disabled person in the co-design workshop wondered whether the ‘exceptional positive representation’ message might get people’s attention more as it “shouts louder and people are more impressed”. We cannot tell from this study whether this was the case or if it would have been more effective if it centred on a personal story, so future research should seek to understand this.

The ‘behaviour change’ message marginally significantly improved overall attitudes, which was driven by increasing perceived competence and support for equality. It did not increase the likelihood of clicking on further information and was the only message to marginally significantly worsen implicit attitudes. However, we would caution against overinterpreting the impact on implicit attitudes of this message as this was only marginally significant and there is a chance it could be spurious.[78] If this was a ‘true’ effect, it may have been the slightly accusatory tone in some of the message, although this is a weak explanation.

Due to the online experimental design, the targeted behaviour in the message (how employers ask about reasonable adjustments in the workplace) was different from the behaviour that was measured (clicking on further content about how to support equality for disabled people), so we cannot know whether it made a difference to how employers ask about reasonable adjustments. Measuring attitudes in response to targeting a specific behaviour is likely too general to translate. In addition, messages that target behaviour might have an impact on attitudes downstream, through changing behaviour. Ideally, future research would measure the impact of this message on the behaviour it targets and then understand whether this affects attitudes in the longer term.

The disabled people in the co-design workshop generally felt positively about this message, but mainly in its potential for changing behaviour rather than attitudes, as one individual felt, “messages that focus on solutions are really powerful, and probably the most effective in terms of making people change their behaviour towards disabled people.” BIT would recommend taking a different approach to

[78] Especially since the implicit attitudes results were not corrected for multiple comparisons.

changing behaviour. While this study deliberately took a universal approach to changing attitudes in general, changing behaviour requires a deeper understanding of the specific context and environment in which the behaviour takes place in order to design an intervention to change it.

Humour did not have the expected positive effect

The humour message had no impact on any of the explicit attitudes indices, apart from support for equality (as did all messages). However, it was one of the two messages that increased the likelihood that people clicked on further information despite having no impact on attitudes. It is difficult to tell why that is the case, or if it was a potentially spurious result given the rest of the findings. Unpublished BIT research found that humorous memes were highly engaging in a social media campaign about disinformation, but this engagement did not translate into longer term behaviour change.[79]

Humour is risky, as one of the disabled people in the co-design workshop noted, “humour is very personal and one person’s humour could be another person's insult”. It was difficult to find or create a funny message in written text form and most of what was found in real campaigns was in video format, which may be a better format for conveying humour. To be effective, humorous messages are ideally funny, as another disabled person in the co-design workshop noted, “I think humour can be massively powerful in changing opinions, but it has to actually be funny.” Future research should understand the impact of humour across different formats, particularly video, and test a range of humorous messages to appeal to different senses of humour.

It is also worth noting that the ‘humour’ message had the longest average (median) viewing time at 45 seconds. It is plausible that this longer viewing time may have reduced the impact of the message. Meanwhile, the ‘things in common’, ‘exceptional positive representation’, ‘highlighting injustice’ and ‘perspective-taking’ messages all had average viewing times between 24 and 28 seconds. However, these messages had mixed impacts, making it unlikely shorter messages are necessarily more effective or primarily effective because of their length. Nonetheless, future research should aim to create messages of a similar length to rule out the impact of this.

Non-disabled participants responded more positively than disabled participants

The messages generally had a more positive effect on non-disabled participants than disabled participants. However, this seems to be largely due to different starting points. Non-disabled participant attitudes were more likely to improve but they started with less positive attitudes than disabled participants. For example, all messages increased support for equality among non-disabled participants, but they were 12 percentage points less supportive of equality than disabled participants in

79

the control group (67% vs 79%). The fact that every message increased support for equality among non-disabled people, but not really among disabled people, suggests that simply exposing non-disabled people to information of any kind about disabled people is likely to increase their support for disabled people's equality.

Several messages had negative effects for disabled participants. Only the 'perspective-taking' message had a positive effect for disabled participants, significantly increasing their perceived competence of disabled people. At the same time, the 'humour', 'behaviour change' and 'factual' messages all increased the perceived fear of disabled people. The 'factual' message also significantly decreased the perceived competence of disabled people among disabled participants, largely driving the overall decrease in competence. For each of the negative effects, it is likely that the challenges previously outlined emerged to a greater extent for disabled participants. However, it is also possible that there were specific contextual factors in the message that drove these findings, which cannot be ruled out.

Limitations & future research

A key limitation of this research is that it is very difficult to create a 'pure' message. This means that some of the messages may be combining multiple approaches. The intention was for all the non-factual messages to involve a story or narrative, but in some cases these were personal and in others not. In addition, it was very difficult to create a 'generic' message and impossible to create one that is not set in a particular context, making it difficult to know whether it is the specific context that might be driving outcomes. Future research could test 10s or 100s of messages across a range of contexts designed to represent each theme to make sure that the effect is not driven by a particular contextual factor in a given message.

While we wanted to understand the unique impact of each approach, campaign messaging is likely to combine multiple of these techniques and combining techniques may be more effective. Content about the negative experiences of disabled people are the most likely to need combining with solutions or positive messages to make them more effective. Future research should test the impact of combining approaches.

The messages in this study were limited to text format only, however, other formats may be more effective such as video, imagery, or audio. This is especially the case for conveying humour, but even for other approaches, a range of formats may be more engaging and impactful for a wider audience. Future research should test the impact of messaging in a range of formats.

In this study, the impact of the messages on attitudes was measured immediately after viewing the message. However, the effect might decrease over time and so future research should understand the impact in the longer term. Similarly, the online

experiment only exposed the message to participants twice in a one-off interaction. Repeated exposure is likely to be more effective and is often a common approach in mass media campaigns. Future research should understand the impact of repeated exposure.

While the differential impact of the messages on disabled and non-disabled people was explored, messages are likely to have different impacts across a range of different audiences. A given campaign should tailor messaging to the specific audience that is being targeted and it may be more effective to have multiple messages targeting different audiences than to have one message that tries to have an impact on everyone. Particularly if centering the message on one individual's personal story, across a whole campaign a number of stories may be necessary to appeal to as wide an audience as possible. Future research should understand the impact of tailoring messages to different audiences.

It is notoriously difficult to measure attitudes, especially when they are socially undesirable. However, while social desirability may have underestimated negative attitudes on the whole, we were primarily interested in differences in responses between the messages. These differences are unlikely to be driven by differences in social desirability, which would affect all participants, so the observed effects are likely a reasonable indication of the impact on explicit attitudes. Similarly, implicit attitudes are difficult to measure. The IAT is the only established instrument, but has received criticism and, in particular, the disabled symbols it uses are not representative of all kinds of impairments and conditions. Due to these issues, attitudinal measures often do not predict how a person would actually behave towards disabled people. Future research should measure the impact on behaviours, which can sometimes better indicate deep-seated attitudes, also known as 'revealed preferences'.

Finally, many campaigns want to achieve more than changing attitudes and typically want action. The messages in this study were largely not designed to change a specific behaviour (that was measured). A number of additional or different techniques may be required to achieve behaviour change and we cannot know from this study whether the same approaches that change attitudes would change specific discriminatory behaviours.

Implications

Based on the insights from this study, we recommend the following principles for designing media campaigns.

- **Affirm the status of disabled people.** Representations of disabled people should be careful not to reinforce harmful stereotypes about lower competence. Positive representations that depict disabled people with a

degree of status, whether that's through their job, community, family or friends, should aim to foster respect and preserve dignity. This makes it possible to describe negative experiences in a way that engages audiences.

- **Share stories and personal experiences.** Aligned with existing evidence, this study emphasises the importance of personal stories in addressing negative attitudes, particularly those that focus on a named individual. Stories are more persuasive than factual information, especially for emotive subjects.
- **Encourage people to think about how they would feel facing inequality.** To make personal stories more effective, invite audiences to imagine a perspective that is relatable, such as unfair treatment. Asking people to imagine this perspective may be more effective than personal stories alone if it encourages "self-persuasion". This adds to the existing prejudice-reduction literature that finds narratives and self-persuasion are important for changing attitudes, by providing the first evidence that perspective-taking is also effective for changing attitudes towards disabled people.[80]

Take care when:

- **Talking about injustice.** Stories focused entirely on disadvantages and injustice can position disabled people as vulnerable. This risks reinforcing the harmful stereotype that disabled people are less competent, increase fear and lead to avoidance.
- **Using facts and figures.** Facts and figures alone struggle to emotionally engage audiences, which is important for changing attitudes.

Context is vitally important and so any given individual campaign message should always be tested to understand the impact both when set in that context and on the target audience. The main lesson from our trial is the need to continue testing which campaign messages work and which do not, including discovering any unintended effects they may have.

[80] Kalla, J. L., & Broockman, D. E. (2020). Reducing exclusionary attitudes through interpersonal conversation: Evidence from three field experiments. American Political Science Review, 114(2),

6. Appendices

Appendix 1: Further information on trial design

1.1 Further information from the co-design workshop

Table A1.1.1. Co-design workshop participants' perceived impact of each message (n = 5)

Message	Positive impact	No impact	Negative impact
Things in common	80%	0%	20%
Humour	40%	40%	20%
Behaviour change	100%	0%	0%
Emphasising positive difference (since retitled 'Exceptional positive representation')	100%	0%	0%
Highlighting injustice	40%	40%	20%
Perspective-taking	100%	0%	0%
Factual	40%	0%	60%

Table A1.1.2. Co-design workshop participants' general feedback for each message, and changes that we made based on the feedback

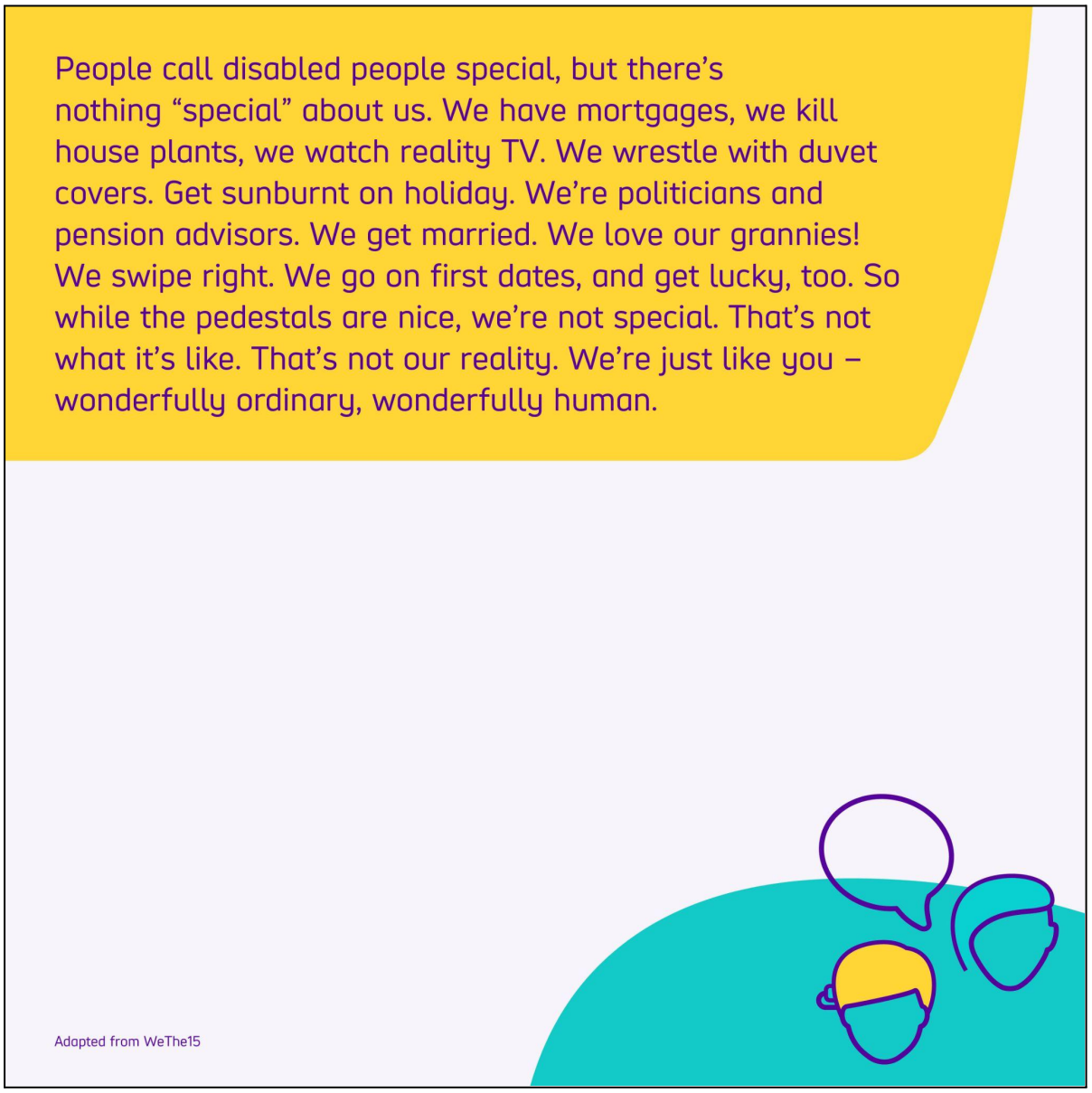
Message type	General feedback	Changes made based on the feedback
Things in common	The co-design workshop participants generally felt quite positively about this message. Generally people felt that it breaks down the "otherness" of disabled people. One person felt that the superhuman message would be better at attracting attention. One person noted the risk that this message could downplay the needs that disabled people have or exclude disabled people who need assistance	We included a measure of attitudes around adjustments for disabled people.

	with daily living.	
Humour	The co-design workshop participants had mixed reactions to this message. While some felt that humour is a great tool for breaking barriers, others felt that people have different senses of humour so one message will work really well for some and not others. One person noted that humour can be massively powerful, but it has to "actually be funny". Another felt that this message could suggest disabled people don't need reasonable adjustments. A few mentioned that it would be best to come from disabled people, such as comedian Rosie Jones.	We did not make any changes based on the workshop because the message was ratified by the co-design participants.
Behaviour change	The co-design workshop participants felt positively about this message. People liked that this simplified what people need to do if they are unsure and that it demonstrated a positive example of behaviour. Generally people liked that it provided people with a solution. One person raised the concern that while changing behaviour might be easier, some people might be resentful.	We removed the word 'struggle' to reduce overlap with the 'highlighting injustice' message. We also included a measure around resentment towards making adjustments for disabled people.
Emphasising positive difference (since retitled 'Exceptional positive representation')	The co-design workshop participants generally felt quite positively about this message. One participant still felt positively about it despite acknowledging that it is not well received by the wider disabled community. One person noted that it is good as long as it is done "with an understanding of disability and also not just focusing on the disability".	We did not make any changes based on the workshop because the message was ratified by the co-design participants.
Highlighting injustice	The co-design workshop participants were much more mixed in their reactions to this message. Some felt that this approach is an effective way	We did not make any changes based on the workshop because the message was ratified

	of making people aware of the challenges disabled people face and didn't think that it would result in pity. Others felt that it othered disabled people or even implied that bullying disabled people is normal. Some felt that this type of message should be coupled with a solution, or a representation of someone sticking up for them and/or being inclusive.	by the co-design participants.
Perspective-taking	The co-design workshop participants generally felt positively about this message. They liked it because they felt it brought "disability to life" and liked the positive messaging around her performance at work. One person suggested that it might be worthwhile talking about how they would manage her deafness.	We adjusted the message to more accurately reflect the perspective-taking literature.
Factual	The co-design workshop participants had mixed reactions to this message. Some people felt that it provided important information that many people are ignorant of. Others didn't think that it would engage people or that people are already aware that disabled people are disadvantaged. One person pointed out that different people in the audience might respond more to numbers than others. One person suggested combining this approach with another technique.	We did not make any changes based on the workshop because the message was ratified by the co-design participants.

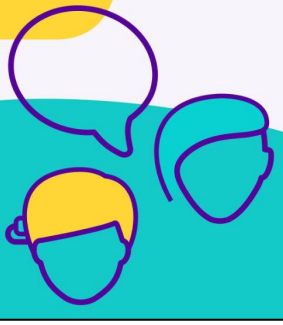
1.2 Messages used in the experiment

Things in common



Humour

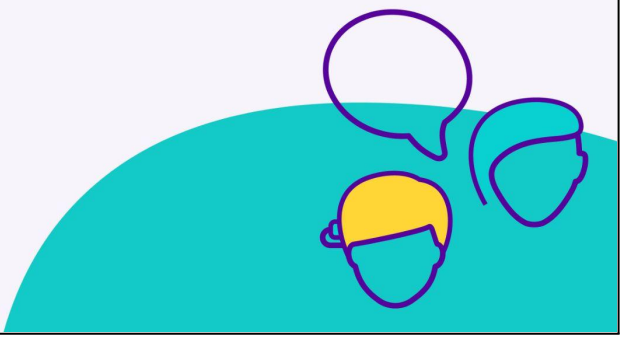
There probably isn't an environment more effective at reminding you of your shortcomings than an all-girls school. I realised with shock that I was, without a doubt, ABNORMAL. Not just because of my disability but on account of various crucial factors such as my choice of music (Frank Sinatra was not cool, apparently). By the time I left, I had the self-worth of a wet sock. I had fully taken on board my classmates' views of me and had privately declared myself to be a loser who would end her days as a wobbly old spinster with only Old Blue Eyes to get her through those long lonely nights. At the beginning of 1999, I reluctantly joined a comedy workshop as research for an acting role. Later, in the pub, another student made me realise that nobody is normal. I wasn't wrong or faulty or abnormal – I was just Francesca. Everyone on the planet is different and that is normal. This radical shift in perspective transformed me from whingy git to a very grateful one in minutes.



Adapted from an article in the Independent by comedian Francesca Martinez

Behaviour change

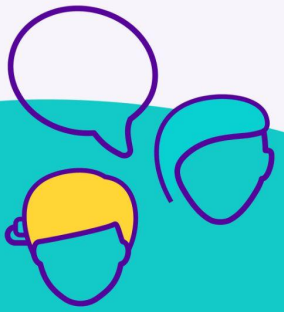
Being disabled doesn't affect my ability to work... for the most part. Most that is strenuous is phones and I currently use phones in my workplace on almost a daily basis.
How do I do that with my disability? My manager sat me down and we talked about our concerns from both sides.
So instead of thinking or worrying about what I can or can't do, make a list and just talk to me, or any employee that you feel might not be able to do that job because of their disability. No one knows their abilities better than the person in question. To put everything simply...
you just need to ask



Adapted from Working for Change

Exceptional positive representation

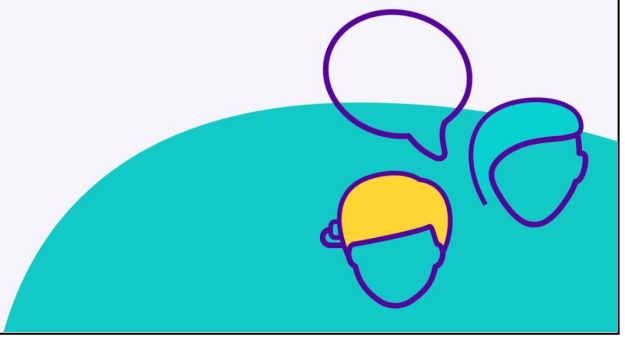
Superhuman champion disabled swimmer Emma Richards has been ruling the waves since 2008. Richards has won a total of FIVE Paralympic gold medals, winning her first at the age of just 13. She is disabled and has been interested in swimming since the age of five. Richards was the youngest British athlete at the 2008 Paralympics in Beijing, and won gold medals in the 100m freestyle and 400m freestyle. She is superhuman!



Adapted from We're the Superhumans and an article about Ellie Simmonds by the Sun

Highlighting injustice

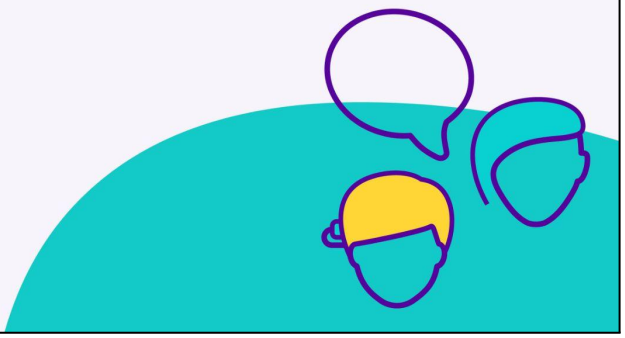
"We had to move. The bullying had become so severe that Ben would no longer leave the house." Ben, who is disabled, was just 15 when his life was ruined by bullies. "When we moved house, Ben was desperate to make friends with the local children," explains his mum, Charlotte. "But he often returned home with spit on him or the tyres of his bike deflated. On some days he was chased by a group of children until he reached the safety of home." Ben couldn't understand why the other children didn't want to be his friend.



Adapted from Don't Stick It, Stop It!

Perspective-taking

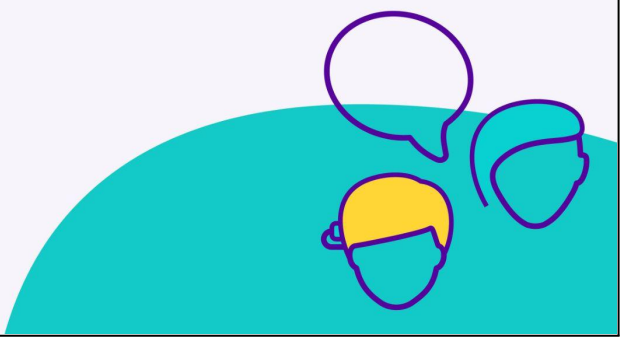
Sarah loves working in HR. She is a great fit for the job: she works hard, she is positive, friendly and a team player. However, imagine if as soon as you say “I’m disabled” in a job interview, people start to question whether you can do the job. She has often experienced disbelief and ignorance about her being disabled. How would you feel if you were Sarah?



Adapted from Working for Change and Possibility with Disability

Factual

One in five people in the UK are disabled – about 14.1 million of us – including half of people aged over 65. Many of those people travel for pleasure, despite two-thirds of disabled people saying they have experienced problems using public transport in the last year. Disabled people routinely struggle to have their access needs met, and trying to organise a trip away comes with significant additional burdens, including a substantial investment of time and energy into extra layers of planning, and often additional costs. Surveys showed 23% of non-travelling disabled people found travel "so stressful it's not worth it" and 22% found it "just too hard". In fact, 30% of disabled people say that difficulties with public transport reduced their independence.



Adapted from an article about accessible tourism in the Guardian

1.3 Further information on outcome measures

1.3.1 Coding and scales used for the outcome measures

Primary outcome measure

- Explicit attitudes towards disabled people (overall)

The overall explicit attitudes measure combines items relating to perceptions of disabled people's competence, fear of disabled people (reverse coded),[81] perceived otherness of disabled people (reverse coded), and support for equal rights for disabled people.

These items were developed based on the following scales:

- **Competence:** how competent participants felt disabled people are. BIT could not find an individual adequate existing survey measure that measured perceived competence. As a result, two survey items from the 2017 British Social Attitudes (BSA) survey[82] and three survey items from the Attitudes Towards Disabled Persons (ATDP) - Form A[83] were used, resulting in a total of five competence items. The competence index is the average score of these five items.

- **Fear:** the extent to which participants thought of disabled people with fear, discomfort or awkwardness. One item from the 2017 BSA survey[84] and four items adapted from the Prejudice towards People with Mental Illness (PPMI) scale to apply to disabled people in general were used.[85] The fear index is the average score of these five items.

- **Otherness:** the extent to which participants thought of disabled people as different to non-disabled people. One item from the 2017 BSA survey,[86] two items from ATDP - Form A[87] and two items from ATDP - Form B were used.[88] The otherness index is the average score of these five items.

- **Support for equal rights:** the extent to which participants support policies that achieve greater equality for disabled people Two items from the 2017 BSA survey[89], two items from the Attitudes and Perspectives toward Persons

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[81] Reverse coding refers to the re-coding the response so that a high score is transformed into the corresponding low score on the scale, and vice versa.
[82] NatCen (2017) British Social Attitudes survey 2017
[83] Yuker, H. E. (1970). The measurement of attitudes toward disabled persons.
[84] NatCen (2017) British Social Attitudes survey 2017
[85] Kenny, A., Bizumic, B., & Griffiths, K. M. (2018). The Prejudice towards People with Mental Illness (PPMI) scale: structure and validity. *BMC psychiatry*, *18*(1), 1-13.
[86] NatCen (2017) British Social Attitudes survey 2017
[87] Yuker, H. E. (1970). The measurement of attitudes toward disabled persons.
[88] Yuker, H. E. (1970). The measurement of attitudes toward disabled persons.
[89] NatCen (2017) British Social Attitudes survey 2017

with Disabilities (APPD) scale[90] and one item created by the Behavioural Insights Team (BIT) team were used for the purpose of this experiment. The support for equal rights index is the average score of four of these items. It was decided not to include one of the BSA items ("Overall, do you think equal rights for disabled people have gone too far or not gone far enough?") in the equal rights index. This was because it used a different response scale to the other items.

1.3.2 Survey questions

Sentiment

What three words come to mind when you think about the above information?

- [three short free text]

Looking at the information again, to what extent do you think it…

… helps you understand how disabled people feel
… is easy to understand
… is trustworthy
… fits with your beliefs

[Not at all / A little / Moderately / Very much]

Does the above information make you feel…

… comfortable?
… happy?
… guilty?
… concerned?
… sad?
… angry?

[Not at all / A little / Moderately / Very much]

Would you like to see information like this in the future?
[No, definitely not / No, probably not / Unsure / Yes, probably / Yes, definitely]

Attitudes towards disabled people

Overall, do you think equal rights for disabled people have gone too far or not gone far enough?[91]
[Definitely too far / Probably too far / About right / Probably not far enough / Definitely not far enough]

To what extent do you support the following policies?[92]

- Allocating more tax money on welfare benefits for disabled people.

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[90] Myong, Y., Shin, H. I., Lee, J. E., Cho, W., & Yi, Y. G. (2021). Development and Validation of a New Scale to Assess Attitudes and Perspectives Toward Persons With Disabilities. *Annals of Rehabilitation Medicine*, *45*(4), 331.

[91] NatCen (2017) British Social Attitudes survey 2017

[92] Myong, Y., Shin, H. I., Lee, J. E., Cho, W., & Yi, Y. G. (2021). Development and Validation of a New Scale to Assess Attitudes and Perspectives Toward Persons With Disabilities. *Annals of Rehabilitation Medicine*, *45*(4), 331.

- Funding to make schools, community centres, and other facilities more accessible for disabled people in my neighbourhood.

[Not at all / A little / Moderately / Very much]

Do you tend to think of disabled people in general… [93]

… as needing to be cared for
… as not as productive as non-disabled people
… with discomfort and awkwardness
… as the same as everyone else
… as getting in the way

[Never / Hardly ever / Some of the time / Most of the time]

To what extent do the following statements describe your views or experiences?

- We should expect just as much from disabled as from non-disabled people[94]
- Disabled workers cannot be as successful as other workers[95]
- Most disabled people can take care of themselves[96]
- Disabled and non-disabled people should live and work together[97]
- Most disabled people are different from non-disabled people[98]
- Disabled people can have a normal social life[99]
- Disabled people should not expect to lead normal lives[100]
- The requirement for employers to make adjustments in the workplace for disabled people creates too much burden on businesses, e.g. providing personal assistant support or transport[101]
- I would feel relaxed if I had to talk to a disabled person[102]
- I am not scared of disabled people[103]
- In general, it is easy to interact with a disabled person[104]
- I would prefer to avoid being around a disabled person[105]

[Not at all / A little / Moderately / Very much]

Demographic questions

What is your current annual household income before taxes?

- Less than £5,000
- £5,000 to £9,999
- £10,000 to £14,999

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[93] NatCen (2017) British Social Attitudes survey 2017
[94] Yuker, H. E. (1970). The measurement of attitudes toward disabled persons.
[95] Yuker, H. E. (1970). The measurement of attitudes toward disabled persons.
[96] Yuker, H. E. (1970). The measurement of attitudes toward disabled persons.
[97] Yuker, H. E. (1970). The measurement of attitudes toward disabled persons.
[98] Yuker, H. E. (1970). The measurement of attitudes toward disabled persons.
[99] Yuker, H. E. (1970). The measurement of attitudes toward disabled persons.
[100] Yuker, H. E. (1970). The measurement of attitudes toward disabled persons.
[101] Created by BIT
[102] Kenny, A., Bizumic, B., & Griffiths, K. M. (2018). The Prejudice towards People with Mental Illness (PPMI) scale: structure and validity. *BMC psychiatry*, *18*(1), 1-13.
[103] Kenny, A., Bizumic, B., & Griffiths, K. M. (2018). The Prejudice towards People with Mental Illness (PPMI) scale: structure and validity. *BMC psychiatry*, *18*(1), 1-13.
[104] Kenny, A., Bizumic, B., & Griffiths, K. M. (2018). The Prejudice towards People with Mental Illness (PPMI) scale: structure and validity. *BMC psychiatry*, *18*(1), 1-13.
[105] Kenny, A., Bizumic, B., & Griffiths, K. M. (2018). The Prejudice towards People with Mental Illness (PPMI) scale: structure and validity. *BMC psychiatry*, *18*(1), 1-13.

- £15,000 to £17,499
- £17,500 to £19,999
- £20,000 to £22,499
- £22,500 to £24,999
- £25,000 to £27,499
- £27,500 to £29,999
- £30,000 to £32,499
- £32,500 to £34,999
- £35,000 to £37,499
- £37,500 to £39,999
- £40,000 to £42,499
- £42,500 to £44,999
- £45,000 to £47,499
- £47,500 to £49,999
- £50,000 to £54,999
- £55,000 to £59,999
- £60,000 to £64,999
- £65,000 to £69,999
- £70,000 to £74,999
- £75,000 to £99,999
- £100,000 and above

What is the highest level of education you have completed?
- Below O-level/GCSE
- O-levels/GCSEs or equivalent
- A-levels or equivalent
- Further qualification (between high school and university)
- Completed some university, but no degree
- University degree
- Master's or professional degree
- Post graduate: PhD
- None of the above

Do you have any physical or mental health conditions or illnesses lasting or expected to last 12 months or more?
- Yes
- No

[If yes] Do any of your conditions or illnesses reduce your ability to carry out day-to-day activities?
- Yes, a lot
- Yes, a little
- Not at all

Behaviour

Find out more about what you can do to support equality for disabled people here.[106]

1.4 Analytical strategy

Primary analysis

- Explicit attitudes towards disabled people (overall)

The overall explicit attitudes measure combines items relating to perceptions of disabled people's competence, fear of disabled people (reverse coded), perceived otherness of disabled people (reverse coded), and support for equal rights for disabled people. The overall explicit attitudes measure was analysed using linear regression. BIT compared all trial arms to the control (seeing no message at all). Results were corrected for multiple comparisons.

Exploratory analysis

- The components of the overall index:
    - Competence index
    - Fear index
    - Otherness index
    - Support for equal rights index

Linear regression was used. All trial arms were compared to the control arm. Each index was corrected for multiple comparisons.

- **The disability IAT:** To calculate the IAT scores, BIT followed the procedure described in the paper "Understanding and Using the Implicit Association Test: I. An Improved Scoring Algorithm". The procedure detailed in the 3rd column of Table 4 (page 214) was used.[107] 7% of participants were classified as speeders (reacting faster than 300ms on more than 10% of the trials) and were removed from the analysis. There was no significant difference in the proportion of speeders across arms. Linear regression was used. All trial arms were compared to the control arm.

- **Behaviour:** The proportion of participants who clicked to find out more about what they can do to support equality for disabled people was calculated. Linear regression was used. All trial arms were compared to the control arm.

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[106] https://www.scope.org.uk/newsletters/every-day/

[107] Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of personality and social psychology*, *85*(2), 197.

- **Sentiment:** The control arm was not asked any sentiment questions. BIT identified the ‘best performer’ by taking the highest score for the ‘makes them feel comfortable’ and ‘makes them feel happy’ items and the lowest score for the ‘makes them feel guilty’, ‘makes them feel concerned’, ‘makes them feel sad’ and ‘makes them feel angry’ items. The trial arms that were not significantly different from the best performer at $p < 0.05$ level were checked.

- **Approval:** The control arm was not asked any approval questions. BIT identified the ‘best performer’ by taking the highest score. The trial arms that were not significantly different from the best performer at $p < 0.05$ level were checked.

- **Subgroup analysis by disability status:** Separate regressions for each subgroup were performed (coarsening the disability variable into two groups of disabled and non-disabled).

For all exploratory analyses apart from the individual explicit attitudes indices, findings were not corrected for multiple comparisons.

Data cleaning

Two researchers cleaned the data separately, this included dropping participants who failed their technical (e.g. people entering the survey twice) and attention checks. Participants who did not complete the survey were also dropped. In order to ensure they were working with the same final sample, they carried out a few checks, such as whether they had the same average figures for a few measures.

Appendix 2: Further results

2.1 Exploratory analysis

Conditions are numbered as follows in the tables in the appendices:

(1) Things in common
(2) Humour
(3) Behaviour change
(4) Exceptional positive representation
(5) Highlighting injustice
(6) Perspective-taking
(7) Factual

Competence index

Table A2.1.1. Competence: the proportion of people in each trial arm who 'moderately' or 'very' much agreed with each of the competence items

% of participants who 'Moderately' or 'Very much' think…	**Control**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
… of disabled people as **needing** to be **cared** for [reverse coded]	82%	75%**	76%**	75%**	77%*	85%	73%**	83%
… of disabled people as **not as productive** as non-disabled people [reverse coded]	36%	35%	33%	33%	28%**	33%	26%**	34%
… disabled people **can't be as successful** as other workers [reverse coded]	20%	23%	19%	18%	21%	21%	18%	21%
… most disabled people **can take care of** themselves	72%	75%	70%	75%	75%	66%*	77%$^{+}$	66%*

…we should **expect just as much** from disabled as from non-disabled people	63%	69%*	63%	66%	64%	63%	72%**	57%*

N = 5,498

*** p < 0.01, * p < 0.05, + p < 0.10*

***Green shading** identifies outcomes which significantly improved in comparison to 'Control'*

***Red shading** identifies outcomes which significantly worsened in comparison to 'Control'*

Exploratory analysis, not corrected for multiple comparisons

Fear index

Table A2.1.2. Fear: the proportion of people in each trial arm who 'moderately' or 'very' much agreed with each of the fear items

% of participants who 'moderately' or 'very much' …	**Control**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
… think of disabled people with **discomfort** and awkwardness	31%	30%	33%	30%	29%	30%	29%	36%+
… **feel relaxed** when talking to a disabled person [reverse coded]	86%	86%	85%	85%	85%	88%	87%	84%
… **aren't** scared of disabled people [reverse coded]	73%	74%	74%	73%	72%	74%	73%	73%
… think it **is** easy to interact with a disabled person [reverse coded]	83%	86%	80%	84%	83%	83%	86%	84%
… **would prefer to avoid** being around a disabled person	13%	14%	16%	15%	12%	13%	12%	14%

N = 5,498

*** p < 0.01, * p < 0.05, + p < 0.10*

***Green shading** identifies outcomes which significantly improved in comparison to 'Control'*

***Red shading** identifies outcomes which significantly worsened in comparison to 'Control'*

Exploratory analysis, not corrected for multiple comparisons

Otherness index

Table A2.1.3. Otherness: the proportion of people in each trial arm who 'moderately' or 'very' much agreed with each of the otherness items

% of participants who 'Moderately' or 'Very much' …	**Control**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
… think of disabled people as **the same** to everyone else	86%	87%	87%	89%	87%	87%	89%	84%
… **think** disabled and non-disabled people should work and live together	88%	89%	88%	89%	90%	89%	89%	89%
… think disabled people **can** have a normal social life	88%	87%	87%	88%	89%	87%	88%	88%
… think disabled people **should not** expect to lead a normal life [reverse coded]	17%	18%	17%	18%	15%	15%	17%	17%
… think most disabled people **are** different from non-disabled people [reverse coded]	22%	23%	23%	22%	21%	23%	20%	21%

N = 5,498
*** p < 0.01, * p < 0.05, $^{+}$ p < 0.10*
Green shading identifies outcomes which significantly improved in comparison to 'Control'
Red shading identifies outcomes which significantly worsened in comparison to 'Control'
Exploratory analysis, not corrected for multiple comparisons

Support for equal rights index

Table A2.1.4. Support for equal rights: the proportion of people in each trial arm who 'moderately' or 'very' much agreed with each of the support for equal rights items

% of participants who 'moderately' or 'very much' …	**Control**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**

… think of disabled people as getting in the way [reverse coded]	17%	15%	17%	15%	12%*	15%	14%	15%
… **think** the requirement for employers to make adjustments for disabled people creates too much of a burden [reverse coded]	27%	27%	25%	25%	24%	28%	27%	27%
… **support** allocating more tax money on welfare benefits for disabled people	62%	68%*	66%	63%	68%**	72%**	67%*	69%**
… **support** funding to make schools, community centres, and other facilities more accessible	76%	82%**	79%$^{+}$	83%**	82%**	86%**	84%**	82%**
…equal rights for disabled people have gone **[probably / definitely]** not far enough	55%	58%	64%**	63%**	61%*	76%**	69%**	73%**

N = 5,498
*** p < 0.01, * p < 0.05, $^{+}$ p < 0.10*
***Green shading** identifies outcomes which significantly improved in comparison to 'Control'*
***Red shading** identifies outcomes which significantly worsened in comparison to 'Control'*
Exploratory analysis, not corrected for multiple comparisons

Table A2.1.5. Behaviour: the proportion of people in each trial arm who clicked to find out more about what they can do to support equality for disabled people

Control	(1)	(2)	(3)	(4)	(5)	(6)	(7)
13%	15%	16%$^{+}$	13%	15%	15%	16%$^{+}$	15%

N = 5,498
*** p < 0.01, * p < 0.05, $^{+}$ p < 0.10*
Exploratory analysis, not corrected for multiple comparisons

Table A2.1.6. Sentiment: the proportion of people in each intervention arm who agreed with each of the sentiment items

% of participants who think the information…	(1)	(2)	(3)	(4)	(5)	(6)	(7)
… makes them feel comfortable	69%	37%	64%	71%	10%	16%	15%
… makes them feel happy	61%	36%	53%	76%	8%	12%	10%
… makes them feel guilty [reverse coded]	14%	16%	14%	7%	25%	24%	31%
… makes them feel concerned [reverse coded]	24%	44%	27%	11%	88%	74%	79%
… makes them feel sad [reverse coded]	19%	43%	17%	9%	89%	68%	73%
… makes them feel angry [reverse coded]	13%	31%	10%	7%	82%	58%	55%

Because sentiment questions were not asked for the control group, the best performer is shaded in green and also underlined (highest score for the first two items, and lowest score for the rest of the items). The trial arms that were not significantly different from the best performer at p <0.05 level were checked.

N = 4,857

Exploratory analysis, not corrected for multiple comparisons

Table A2.1.7. Approval: the proportion of people in each intervention arm who agreed with each of the approval items

% of participants who think the information…	(2)	(6)	(7)	(1)	(3)	(4)	(5)
… helps them understand how disabled people feel	84%	70%	83%	56%	81%	78%	84%

… is easy to understand	89%	82%	85%	91%	90%	87%	89%
… is trustworthy	86%	75%	81%	82%	83%	80%	84%
… fits with their beliefs	86%	69%	84%	77%	64%	66%	74%
… is something they would like to see again in the future	85%	73%	85%	83%	65%	66%	81%

Because approval questions were not asked for the control group, the best performer is shaded in green and also underlined (highest score for the first two items, and lowest score for the rest of the items). The trial arms that were not significantly different from the best performer at p <0.05 level were checked.

N = 4,857

Exploratory analysis, not corrected for multiple comparisons

Table A2.1.8. Subgroup analysis by disability

	Control	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Disabled							
Overall	77%	78%	74%$^{+}$	74%$^{+}$	77%	75%	78%	74%
Competence Index	63%	63%	62%	63%	66%	59%	70%*	58%*
Fear index	15%	15%	22%**	20%*	17%	18%	16%	19%$^{+}$
Otherness index	13%	12%	14%	16%	14%	13%	12%	13%
Equality Support index	79%	82%	80%	75%	83%	83%	81%	81%

	Non-Disabled							
Overall	72%	73%	73%	74%*	74%*	72%	74%**	71%
Competence Index	58%	62%**	61%$^{+}$	63%**	61%*	58%	65%**	56%
Fear index	22%	21%	22%	21%	21%	20%	20%$^{+}$	23%
Otherness index	16%	17%	16%	14%	15%	15%	15%	16%
Equality Support index	67%	70%*	71%**	74%**	73%**	77%**	74%**	75%**

N = 5,498
*** p < 0.01, * p < 0.05, $^{+}$ p < 0.10*
***Green shading** identifies outcomes which significantly improved in comparison to 'Control'*
***Red shading** identifies outcomes which significantly worsened in comparison to 'Control'*
Exploratory analysis, not corrected for multiple comparisons

Table A2.1.9. Three words: Participants were asked to write the first three words that came to mind after reading the messages. The table shows the number of times each word was written down by a participant in one of the intervention arms.

	Total	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sad	*655*	9	90	10	2	259	135	150
Inspiring	*223*	11	36	11	162	3	0	0
Angry	*149*	0	2	0	0	71	61	15

Honest	*146*	79	29	26	3	0	4	5
Discrimination	*115*	2	7	3	0	11	79	13
Upset	*94*	0	2	0	0	38	44	10

Some words were excluded because they appeared in the message itself: ‘disabled’, ‘bully’, ‘champion’, ‘bullying’, ‘abnormal’, ‘disable’, ‘positive’, ‘refund’, ‘gold’, ‘friendly’.

‘Inspiring’ and ‘inspirational’ were grouped together.