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Workshop resource - Summary of published research

This table summarises the results of some recent research on the effects of drawing people's attention to particular values – in the language of psychologists, "priming" values. The table helps to show the various ways in which researchers have sought to engage these values – and some of the effects that have been found. Each row in the table summarises a different experiment. The first column ("Intrinsic prime") details the way in which researchers have sought to engage intrinsic values. Some (but not all) studies also test a 'neutral' or 'mixed' prime, devised to either engage no values, or to simultaneously engage both intrinsic and extrinsic values. These are listed in the second column ("Control or mixed prime"). The third column ("Extrinsic prime") details the way in which researchers have sought to engage extrinsic values. The fourth column ("Outcome variable") details the particular outcome that researchers studied, in anticipation that this would be influenced by the type of prime that participants received. The "Result" column summarises the effects that they found.

Studies of the kind listed here tend to examine short-term effects. It is far more difficult to devise studies which examine longer-term effects. However, as we discuss elsewhere in the Toolkit, there is experimental evidence (and there are strong theoretical arguments) that by repeatedly engaging particular values, a person is likely to come to attach greater importance to these values in a persistent or 'dispositional' way.

For those who are interested in key statistics related to these studies (including effect sizes) we have produced a longer version of this table which includes these details. Ask us, and we'll send you a copy.

Table compiled by Bec Sanderson and Jamie McQuilkin, at the Public Interest Research Centre.

Intrinsic prime	Control or mixed prime	Extrinsic prime	Outcome variable	Result	Notes	Reference
Participants were asked to write short written answers to three questions about their national identity, having read: "*Now we would like to know more about you as an American. The American people are known around the world for their generosity, and their willingness to pull together in times of need. Americans are also known for their ideal of self-expression and personal development, and for their strong family values*".	*''Now, we would like to know more about you as an American''.*	Participants were asked to write short written answers to three questions about their national identity, having read: "*Now we would like to know more about you as an American. The American people are known around the world for their focus on wealth, financial success, and material gain. Americans are also known for their competitiveness, and for their movie industry with its Hollywood ideals of beauty, celebrity, and fame.*"	Recommendations for Americans' ecological footprint.	Subjects primed with an intrinsic American identity recommended significantly lower ecological footprints than did those in the other conditions.	Participants were 322 undergraduate psychology students. Note that the intrinsic prime makes no mention of values obviously related to the environment – this experiment seems to reveal 'bleed-over' effects.	Sheldon, K. M., Nichols, C. P. & Kasser, T. (2011). Americans Recommend Smaller Ecological Footprints When Reminded of Intrinsic American Values of Self-Expression, Family, and Generosity. *Ecopsychology 3*(2), 97-104.
Memorise pairs of **benevolence** values (forgiving, helpful, honest) and positive	In the control condition, participants sorted the names of food items (e.g., ham	Memorise pairs of **achievement** values (ambitious, capable, successful) and	Success in a word search puzzle - number of words detected.	Participants in the achievement condition exhibited significantly more achievement	112 undergraduate psychology students.	Maio, G.R. et al., (2009). Changing, priming, and acting on values: effects via motivational

adjectives (happy, excellent, ideal) and clothing item/neutral pairs.	sandwich, veggie pizza) from the adjectives and items of furniture.	positive adjectives (happy, excellent, ideal) and also clothing item/neutral pairs.		behaviour than those in the control and benevolence conditions Participants in the benevolence condition exhibited significantly less achievement behaviour than did participants in the control condition.		relations in a circular model. *Journal of Personality and Social Psychology*, 97(4), pp.699–715.
As above.			Volunteering for future research - amount of time volunteered.	Participants in the benevolence condition exhibited more benevolence behaviour (volunteering around an hour) than participants in the control (c.40 mins) and achievement conditions (c. 30 mins) Participants in the achievement condition exhibited significantly less benevolence behaviour than those in the control condition.	112 undergraduates.	*As above.*
Self-transcendence 7-item quiz on hobbies, work,	**Control:** 6-item quiz about travel, evaluating statements such as	**Self-interest** 7 item quiz (car sharing - economic condition)	Amount of paper recycled , rather than thrown in a waste bin.	Recycling rates were 83% (self-transcendence), 39% (control), 50%	50 participants (c. 12 in each condition) from the Cardiff University human	Evans, L., Maio, G. R., Corner, A., Hodgetts, C. J., Ahmed, S. & Hahn, U. (2013). Self-

health and travel (car sharing - environment condition). Evaluation of statements such as '*Driving a car is good for the environment*' and '*Car-sharing schemes mean that less pollution and greenhouse gases are released into the atmosphere*'. The last item asked participants to rate the importance of saving money.	`*The average person in the UK spends over four hours a year in traffic jams*' and `*The maximum speed limit in the UK is 90 mph*'. **Mixed:** the 7-item Self-transcendence quiz, followed by the 7-item self-enhancement quiz.	evaluating statements such as: `*Cars with bigger engines cost less to run*' and `*The number of people who join car-share schemes in cities to save on running costs has doubled in the past two years*'. The last item asked participants to rate the importance of saving money to them.		(mixed) and 15% (self-interest).	participants panel.	interest and pro-environmental behaviour. *Nature Climate Change, 3*: 122–125.
	For participants in the control condition, the list of sixteen words only included words unrelated to power.	**Power** was subliminally primed using a word completion task. In this task, participants were instructed to complete sixteen words. Participants randomly assigned to the power prime condition had the following six power-related words embedded in the list: authority, boss, control,	Money passed on to the next round of participants in the study versus that kept for oneself, out of a total of $7.	People kept significantly ***less*** money when primed for power.	84 undergraduate students at a major university who were paid $8 to participate in the experiment.	Wade-Benzoni, K.A. et al., 2008. In fairness to future generations: The role of egocentrism, uncertainty, power, and stewardship in judgments of intergenerational allocations. *Journal of Experimental Social Psychology*, 44(2), pp.233–245.

		executive, influence, and rich. The other ten words were unrelated to power (e.g., board, building, chalk, clock, coffee, house).				
Same conditions as above			Stewardship attitudes: consisted of five items that were other-directed: *"The outcome to the other person was important to my decision"*, *"I was more concerned about myself than the other person"* (reversed scored), *"The impact of my decision on the other person was important in my decision"*, *"My goal was to look after the interests of the other person"*, and *"Considerations of social responsibility were important in my decision."*	Stewardship attitudes were ***higher*** scoring with the power prime.	Note that this result (and the one above) seem conspicuously anomalous in the light of results from other studies.	*As above.*

Intrinsic goal before a learning task reading a 4 page piece on recycling *"reading the text will provide you some information about how to teach your future toddlers some simple ecological strategies so that they can learn to contribute themselves to a clean and healthy environment."* ('community' condition).	**Double goal** - both the intrinsic and extrinsic goals before the task.	**Extrinsic goal** before the same task *"reading the text will provide you some information about how to save money on your future job by recycling materials."* ('Monetary benefits' condition).	Immediate: stress during learning task, goal orientation (mastery and performance), test performance (written test of comprehension)	People in the intrinsic condition were significantly less stressed, more mastery oriented, and less performance oriented, than participants in the double goal condition. People in the extrinsic condition were significantly more stressed, less mastery oriented, and more performance oriented than participants in the double goal condition.	245 female, Belgian teacher training students. (Intrinsic = 99; double = 45, extrinsic = 101)	Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., Matos, L. & Lacante, M. (2004). Less Is Sometimes More: Goal Content Matters. *Journal of Educational Psychology, 96*(4): 755-764.
As above.			T2 **one week later:** Performance (group presentation - this correlated 0.92 with test performance, to form a single 'achievement' index), free-choice persistence (trips to library, trips to local recycling plant).	Intrinsic (v double): higher achievement scores, no difference on free-choice persistence. Extrinsic (v double): lower achievement scores, lower free-choice persistence.	*As above.*	*As above.*

| | | Participants were given statements that were either values-congruent, orthogonal, or oppositional and in the following format. *"Research conducted by the Arts Council has found that increasing people's [creativity] has beneficial effects. The studies found that encouraging people to be more [creative] increases their [curiosity in new ideas and methods (congruent)/ influence and impact on others (orthogonal)/ their sense of social order and stability in society (oppositional)]."* | | Index of persuasiveness of the argument. The questions: *"To what extent do you find this reason persuasive?", "How convinced were you by the argument that [creativity/ helpfulness/self-discipline] is a good thing?" "To what extent were you convinced that [creativity/ helpfulness/ self-discipline] is good specifically because it increases behaviour consistent with [curiosity in new ideas and methods/ influence and impact on others/ their sense of social order and stability in society]?" and "To what extent do you agree with the report's position that [creativity/ helpfulness/self-discipline] is important?".* | Congruent reasons were significantly more persuasive than orthogonal and oppositional ones.

Oppositional ones were not significantly less persuasive than orthogonal ones. | The result was not related to how participants prioritised values.

Participants were 60 undergraduate psychology students (38 women, 14 men, and 8 who did not indicate gender) at a British university, who participated for course credit.

Further experiments replicated this in UK and India his and show that the dissonance effect is higher in those that scrutinise the arguments more carefully. | Maio, G.R. et al., 2014. Social values as arguments: similar is convincing. *Frontiers in Psychology, 5:* 829. |

'Care about the environment? Get a free tire check'. Also visual: exhaust fumes.	'Do you care about your safety? Get a free tire check' and control 'Get a free tire check' sign. Also visual: torn tyre and tyre gauge.	'Do you care about your finances? Get a free tire check'. Also visual: burning money.	Number of flyers taken over 22 days.	An estimated 8.7% of the customers noticing the sign took a coupon in the environment condition, 5.5% in the control condition, 4.0% in the safety condition and 0% in the economic condition. Economic appeal was significantly less effective than biospheric and control.	The samples are very small (11 fliers for biospheric, 7 for control, 5 for safety, 0 for economics).	Bolderdijk, J.W., Steg, L., Geller, E. S., Lehman, P. K. & Postmes, T. (2013). Comparing the effectiveness of monetary versus moral motives in environmental campaigning. *Nature Climate Change, 3*(4), pp.413–416.
Prisoner's dilemma game, named "the Community Game".		Prisoner's dilemma game, named "the Wall Street Game".	Difference in number of co-operative responses.	Individuals playing the Community Game offered significantly more cooperative responses than individuals playing the Wall Street Game.	"Predictions about individual players proved valueless, as did trait ratings" - it was all in the name of the game.	Liberman, V., Samuels, S.M. & Ross, L., 2004. The name of the game: predictive power of reputations versus situational labels in determining prisoner's dilemma game moves. *Personality & social psychology bulletin*, 30(9), pp.1175–85.
In the citizen condition, the heading for the instructions was "Citizen Reaction		In the consumer-cue condition, the heading for the instructions was "Consumer	The Evaluative Movement Assessment to measure automatic evaluative impulses	After priming, participants were more easily able to move self-enhancement words	Fifty-eight undergraduates participated, receiving $12 for the completion of two	Bauer, M. a et al., 2012. Cuing consumerism: situational materialism

Study," and the stated purpose of the study was to see "how well citizens can rapidly categorize objects." At the end of the instructions, participants were asked to confirm their eligibility for the study by checking a box indicating that they were "an American citizen"		Reaction Study," and the stated purpose of the study was to see "how well consumers can rapidly categorize objects." At the end of the instructions, participants were asked to confirm their eligibility for the study by checking a box indicating that they were "an American consumer."	toward various personal values.	towards their own name on a computer screen, compared to self-transcendent ones.	unrelated studies; the present study always came first.	undermines personal and social well-being. *Psychological science*, 23(5), pp.517–23.
	In the control condition, participants had to descramble a phrase that primed a neutral concept (e.g., "cold it outside is" became "it is cold outside"). The task involved descrambling 30 sets of five jumbled words like this.	There were two conditions that were designed to prime money. 1. A descrambling task, similar in format to the control but with half the phrases containing money related words. So 15 phrases were money-related (e.g., "high a salary desk paying" became "a high-paying salary"),	Time worked before asking for help.	The two money conditions did not differ from each other but each was significantly different from the control group.		Vohs, K.D., Mead, N.L. & Goode, M.R., 2006. The psychological consequences of money. *Science*, 314(5802), pp.1154–6.

		whereas the remaining 15 were neutral phrases (as in the control). 2. Play money. The participants in the play-money condition were primed with money by a stack of Monopoly money in their visual periphery while completing the neutral descrambling task described in the control.				
2 Equality frames: **1. Pro-voucher** *"Representative John A. Boehner argues that while wealthier parents have the option of transferring their children out of public schools, poor parents do not. "We don't have equal education choice for our students," said*	Control: no frame. Mixed: both the pro and anti voucher argument together (NB still an equality frame).		An open ended question: *When you hear or read about school vouchers, what kinds of things do you think about? Please list as many thoughts as you have.* Variable = percentage of people who used the words "(un)equal," "(in)equality," or "(in)equalities" in	The pro and anti arguments were very similar to each other in their effects. This meant that it was the focus on 'equality' that affected peoples' language in their responses, not whether the equality argument happened to be pro or anti voucher. Open question:	165 undergraduates from George Washington University.	Brewer, P. R. & Gross, K. (2005). Values, Framing, and Citizens' Thoughts about Policy Issues: Effects on Content and Quantity. *Political Psychology, 26*: 929–948.

Boehner, the House Education Committee chairman. Joseph P. Viterriti, the author of "Choosing Equality," advocates vouchers for low-income students in failing public schools. A voucher system, he says, is "not a market model but an opportunity model. What you see is money directed at poor kids, defined by need."

2. Anti voucher
"Equal opportunity— already crumbling as more parents choose private schools—would collapse. Senator Paul Wellstone opposes vouchers "1,000 percent." He argues that "every child in America should have the same opportunity to reach his or her

their reseponse.

A closed question: *"Do you favor or oppose a school voucher program that would allow parents to use tax funds to send their children to the school of their choice?"*

Pro versus Control - more responses used language of equality**.**

Anti versus Control - same trend (more equality language)**.**

Mixed versus Control - even stronger trend**.**

(NB the mixed condition evoked more equality language than the pro.

Closed question: no effect of frames on the direction of opinion about school vouchers.

full potential regardless of the income level of the child's parents. We do so little to attack what author and children's advocate Jonothan Kozol terms the 'savage inequalities' in American education today." Vouchers will only exacerbate those inequalities and do little to provide greater opportunity, said Wellstone, who is a member of the Senate Health, Education, and Labor-Pensions Committee."						
	Scrambled image flashed subliminally (not identifiable as a flag) for 16msec.	Image of Israeli national flag, flashed subliminally (16msec) on screen.	Effect of prime (interacting with high or low self-report Israeli nationalism, IWIN) on: 1. Political stance (e.g. attitude towards formation of Palestine; Israel's	A significant interaction between priming and IWIN emerged. In the control condition, high IWINs expressed very different opinions from low IWINs. Priming brought these groups	53 Israeli university students in total (less in each condition - e.g. about 10 people in control / low IWIN).	Hassin, R. R., Ferguson, M. J., Shidlovski, D., & Gross, L. (2007). Subliminal exposure to national flags affects political thought and behavior. *Proceedings of the National Academy of Sciences USA, 104,*: 19757–19761.

			disengagement from Gaza).	closely together.	
	As above.	*As above.*	2. Political opinion on Jewish settlers in the West bank.	Again, priming interacted with nationalism. In the control condition the two groups expressed different political views. Again, these differences disappeared in the priming condition.	42 Israeli students in total.	*As above.*
	As above.	*As above.*	3. Intention to vote (before an election) and actual voting patterns (**some weeks after the election**).	Intention - there was a significant interaction between priming and IWIN. In the control, the difference between high and low IWINs was highly significant, but after priming this significance was reduced**.** Actual voting - significant interaction between prime and IWIN. In the control, the difference was significant, but this was reduced to zero	101 Israeli students in total. N.B. This result is replicated with American students and the American flag, showing a priming effect over 8 months (Carter et al., 2011).	*As above.*

				in the priming. **NB** the effect of the priming on actual voting was entirely explained by intention expressed before the election (so priming affected intention, which affected voting).		
Nature scenes (e.g., depicting a desert canyon) and did not depict affectively imbued content, such as academic contexts, identifiable buildings (such as firehouses, restaurants, etc.), or animals.	Building or urban scenes (e.g., depicting a city street with buildings on either side) and did not depict affectively imbued content, such as academic contexts, identifiable buildings (such as firehouses, restaurants, etc.), or animals		Eight items assessed immersion in the environments present in slides using a 5-point scale ranging from 1 (not at all) to 5 (very much). Items included *"How completely were all your senses engaged?" "How much did you feel that you were in the places you saw?"* and *"How much did the visual aspects of the environments involve you?"*	Nature predicted higher intrinsic aspirations; the more participants were immersed in natural environments, the greater their increase in intrinsic aspirations**.**	98 undergraduate students.	Weinstein, N., Przybylski, A.K. & Ryan, R.M., 2009. Can nature make us more caring? Effects of immersion in nature on intrinsic aspirations and generosity. *Personality & social psychology bulletin*, 35(10), pp.1315–29.
Replication of above with different images.	*Replication of above with different images.*		As above, plus 14-item connection to nature scale e.g. *"I feel a sense of*	Nature condition strengthened intrinsic aspirations and weakened	112 undergraduates.	*As above.*

			oneness with the natural world around me" and *"I feel that I belong to the Earth as equally as it belongs to me."* and 7-item Likert autonomy scale.	extrinsic; greater immersion in nature led to greater intrinsic and less extrinsic. Nature and immersion together increased autonomy and nature connectedness.		
Replication of above with different images.	*Replication of above with different images.*		Same as above with additional decision task measuring generosity: $5 could be given to another participant, and then doubled. The recipient would choose to return $5 or not.	In decision-making task, people were more generous when exposed to nature. Immersion had a positive effect on generosity for nature and a negative effect on the control condition.	85 students.	*As above.*
Actual plants in the office of the researcher used as the prime this time.	No plants.		Same as above; participants asked to relax for 5 minutes in the room instead of viewing images.	Plants led to higher intrinsic aspirations and lower extrinsic, increased generosity. Depth of immersion in nature/control co-affected all of these in a similar way to previous studies.	72 students.	
Participants spent 10 minutes writing reasons for considering three		Same procedure as 'intrinsic' condition, but for three 'extrinsic' values:	Opinions on climate change, the loss of British countryside, child mortality in	Even though this sample was relatively more extrinsically oriented	30 people: drawn from the 10% most extrinsically oriented in a sample of 774	Chilton, P; Crompton, T; Kasser, T; Maio, G & Nolan, A (2012) *Communicating*

values to be important: **acceptance, affiliation, and being broadminded** (NB 'intrinsic' values that do not relate directly to humanitarian or environmental concerns.) Exact wording: *Below are some values. In the space provided next to the values, please write down reasons why you think the value in question is important. Why do you think acceptance is important? etc.*		**popularity, preserving public image, and wealth**.	developing countries, and child impoverishment in the UK. 1. Attitudes: ·*What are your general thoughts about climate change?* · *What are some of the reasons why climate change is either important or unimportant?* · *Emotionally speaking, how does climate change make you feel?* 2. Recommended actions: · *What actions, if any, do you think that you should take to help with climate change?* · *What other actions, if any, should Government, businesses, and communities take to help with climate change?* 3. Change in self-	(compared to rest of sample, and UK ESS data), the group that reflected on intrinsic values: - Used significantly more 1st person singular pronouns (I, me, my, mine myself) than did participants primed with intrinsic values. - Expressed a greater orientation towards intrinsic values in interview. - Expressed stronger belief that there was an obligation for some person or agency to act to address the topics. - Reflected a less self-interested and more universalistic moral scope than did those primed with extrinsic values. N.B. there was no change in self-reported values after study (except for tradition).	(Cardiff University pool plus Cardiff community participant panel).	*bigger-than-self problems to extrinsically-oriented audiences,* COIN, CPRE, Friends of the Earth, Oxfam, WWF-UK, 25 January (Available at: http://bit.ly/1vlvt1Q Accessed on: 8/8/2014).

			report Schwartz values, pre versus post study			
2 intrinsic messages: **Disability:** *Scope works with disabled people and their families at every stage of their lives. We believe that disabled people should have the same opportunities as everyone else, enabling them to live the lives they choose. Yet today, disabled people are more likely to live in poverty, more likely to experience negative attitudes or prejudice, and are more likely to live alone. They still face marginalisation and discrimination. We help to address the barriers that cause disabled people to be treated unequally, support*	2 mixed (intrinsic / extrinsic) messages: **Disability:** *Scope works with disabled people and their families at every stage of their lives. We believe that disabled people should have the same opportunities as everyone else, enabling them to live the lives they choose. Yet today, disabled people are more likely to be unemployed and receiving benefits and they still face marginalisation and discrimination. In response, we deliver a range of low cost early interventions delivering considerable cost savings for both disabled people and*	2 extrinsic messages: **Disability:** *Scope works with disabled people and their families at every stage of their lives. We believe in giving disabled people the chance to achieve greater success in their lives, so that they can fully contribute to the economy. Yet today, disabled people are more likely to be unemployed and receiving benefits. We deliver a range of low cost early interventions – helping to address these issues, while delivering considerable cost savings for both disabled people and the state. Early intervention represents a great*	Attitude towards and intention to support a conservation organisation (WWF) and a disability organisation (Scope) - e.g. by (i) writing to an MP on behalf of the organisation; (ii) by volunteering for the organisation; (iii) by joining a public meeting; and (iv) by making a financial donation. 1) **Within cause** (e.g. disability prime to disability attitude and charitable support). 2) **Between cause** (e.g. disability prime to *conservation* attitude and charitable support.	1) **Within cause** - Intrinsic messages made people more likely to non-financial support to an organisation (i.e., writing to an MP on behalf of the organisation; volunteering for the organisation; joining a public meeting), whereas extrinsic messages performed no different to the mixed messages. 2) **Between cause** Again, non-financial support was significantly affected: people who read an intrinsic disability prime were more likely to support WWF, and people who read an intrinsic environment prime were more likely to support Scope. There were no differences between	652 participants, drawn from the UK Public Opinion Monitor, maintained by the Institute of Development Studies (IDS).	Crompton, T., Weinstein, N., Sanderson, B., Kasser, T., Maio, G., Henderson, S. (Forthcoming) *No Cause is an Island: How people are attuned to values regardless of cause:* Common Cause Foundation

them in making decisions about what they want to do, and help them put those choices into practice. With the right reassurance and practical assistance, disabled people can live independent lives. **Environment**: *Have you ever paused to think about the importance of the natural world? At WWF, we are working to minimise the loss of nature in the UK – such as plants, animals, woodlands or rivers – by helping people to recognise its real value. The importance of environmental protection is still often overlooked and is not adequately reflected*	*the state. Disabled people are also more likely to live in poverty, more likely to experience negative attitudes or prejudice, and are more likely to live alone. We help to address the barriers that cause disabled people to be treated unequally, support them in making decisions about what they want to do, and help them put those choices into practice. Early intervention represents a great return on investment. For example, one initiative costs around £65,000 to set up – that's just £500 each for the 130 or so families that can be reached over the course of a year. With the right reassurance and practical assistance, disabled people can*	*return on investment. For example, one initiative costs around £65,000 to set up – that's just £500 each for the 130 or so families that can be reached over the course of a year.* **Environment**: *Have you ever paused to think about the contribution that the environment makes to our national wealth? At WWF, we are working to minimise loss of the UK's natural resources – such as plants, animals, woodlands or rivers – by helping people to recognise their real value. Natural assets, and the benefits that they provide, are still often overlooked and are not adequately reflected in*		the primes in intention to donate (which goes against the idea that extrinsic values are more effective for fundraising).		

in planning and policy. One reason for this is that people's inherent appreciation of, and love for, the natural world is often forgotten. Reminding people of the intrinsic importance that they attach to nature can help to address this problem. Consider woodlands, which currently cover nearly 3 million hectares in the UK. At WWF, we are helping people to express and share the feelings they have about woodland areas, and their conviction that it is important to preserve these.

live independent lives.

Environment:
Have you ever paused to think about the importance of the natural world? At WWF, we are working to minimise the loss of nature in the UK – such as plants, animals, woodlands or rivers – by helping people to recognise its real value. The importance of environmental protection is still often overlooked and is not adequately reflected in planning and policy. One reason for this is that the financial value of the environment, and the commercial benefits that people derive, is often overlooked. Putting a monetary value on nature can help

planning and policy. One reason for this is that the financial value of the environment, and the commercial benefits that people derive, is often overlooked. Putting a monetary value on nature can help to address this problem. Consider woodlands, which provide a range of essential goods and services and contribute around £1.2 billion to the UK economy. At WWF, we are helping to develop financing schemes to ensure that those who benefit from environmental goods and services compensate those who provide these services.

	to address this problem. It is also the case that people's inherent appreciation of, and love for, the natural world is often forgotten. Here, reminding people of the intrinsic importance that they attach to nature can help. Consider woodlands, which provide us with a range of essential goods and services and contribute around £1.2 billion to the UK economy. At WWF, we are helping to develop financing schemes to ensure that those who benefit from environmental goods and services compensate those who provide these services. We are also helping people to express and share the feelings they have about the 3 million hectares of woodland areas				

	in the UK, and their conviction that it is important to preserve these.					
In the autonomy-brochure condition, the value of non-prejudice was emphasized. Participants' inner motivation for prejudice reduction was encouraged by emphasizing choice and explaining why prejudice reduction is important and worthwhile. excerpt from brochure, from supplement to the paper: *Why it's Important to Reduce Prejudice in Our Society.* *"As a society, we hold the virtues of tolerance and non prejudice in a very special place - they are important because they increase open-mindedness and*	In the no-brochure condition, participants read only introductory information about the definition of prejudice.	In the controlling - brochure condition, participants were urged to combat prejudice and to comply with social norms of non-prejudice excerpt from paper supplement: *Cracking Down on Prejudice in Our Society* *In today's society, you must control prejudice. In other words, being Canadian means having an anti-prejudiced attitude. For instance, The Human Rights, Citizenship and Multiculturalism Act prohibits discrimination in employment based on the grounds of race, color, ancestry, place of*	24-item Motivation to Be Non-prejudiced Scale (measuring reasoning).	Participants in the autonomy-brochure condition displayed significantly less prejudice than did those in the no-brochure condition and those in the extrinsic version were more likely to show prejudice.	103 non-black undergraduates. Controlling here refers to societal-control, not experimental controls, and autonomy-prime is really about intrinsic motivation not to be prejudiced. Incidentally, the extrinsic prime here is really a conformity prime and has nothing to do with self-enhancement values - this is one of the inconsistencies between Goals and Values.	Legault, L., Gutsell, J.N. & Inzlicht, M., (2011). Ironic effects of antiprejudice messages: how motivational interventions can reduce (but also increase) prejudice. *Psychological Science, 22*(12), pp.1472–7. See also http://pss.sagepub.com/content/suppl/2011/11/28/0956797611427918.DC1/DS_10.1177_0956797611427918.pdf for brochure extracts.

social justice. Social justice is the vital ingredient in a free, fair, and peaceful society. When equality and equity among human beings are achieved, there is less reason for any group or individual to be unhappy... It is also important to be nonprejudiced because it is so interesting to interact with and learn about people from other cultural and social groups. We live in a wonderful and diverse cultural community. That diversity makes our society great because it brings a wealth of knowledge and experience together. When we let go of prejudice, the rich diversity of society is ours to enjoy... Not to mention, being open-minded is a		origin, religious beliefs........ Employers have an obligation to create a 'no prejudice' workplace, and companies face legal liability for workplace prejudice or discrimination. The same standards are being set in the education domain. In fact, a recent government policy initiative by Human Resources and Skills Development Canada requires that educators demand anti-prejudice classrooms. Teachers and students caught displaying racist attitudes and behavior can face serious consequences, such as termination or expulsion... There are also social perks to controlling racism - for instance, low			

real advantage to our mood and well-being.When there is less racial and cultural tension, people are happier and healthier,and better able to do the things they enjoy....You are free to choose to value non prejudice. Only you can decide to be an egalitarian person... In today's increasingly diverse and multicultural society,such a personal choice is likely to help you feel connected to yourself and your social world...		prejudiced people tend to be better liked than racists. The better we are at reducing prejudice, the more we are likely to fit in with today's anti-prejudice norms. Research studies reveal that people with prejudiced attitudes are at risk of being excluded or ostracized. In one recent study, most people reported that their social groups at work and at school disapproved of prejudice and racism,and people feared being looked down upon if they made prejudiced or racist remarks...In today's multicultural society, we should all be less prejudiced.We should all refrain from negative stereotyping. It is, after all,the politically and			

		socially correct thing to do, and it's something that society demands of us.				
Autonomy-prime condition: *I enjoy relating to people of different groups. Being nonprejudiced is important to me. I can freely decide to be a nonprejudiced person. I value diversity. It's fun to meet people from other cultures. It's not important to understand others. (reverse-scored) Equality and equal rights across cultural groups are important values. I think that issues of diversity are interesting.*	Filler questions	Controlling-prime condition [extrinsic]: *It is socially unacceptable to discriminate based on cultural background. People should be unprejudiced. I would be ashamed of myself if I discriminated against someone because they were Black. There are no social norms about prejudice in society. (reverse-scored) I should avoid being a racist. I would feel guilty if I were prejudiced. Prejudiced people are not well liked. People in my social circle disapprove of prejudice.*	Race IAT (implicit), Symbolic Racism 2000 scale (explicit) and motivation to be nonprejudiced.	Autonomy led to less explicit racism but the extrinsic condition led to more racism. Same with IAT.	109 non-black undergraduates. Through studies of interaction, the pathway seems to be to activate people's existing values - i.e. the intrinsic prime is not so effective in more racist people as in more tolerant people.	

2 primes for equality: (a) **Reason salience:** *"We would like you to think about reasons that, in general, could be used to support or oppose the importance of treating others equally. For example, you might believe that people should treat others equally because equal treatment allows people to succeed or fail according to their own abilities. In contrast, you might believe that people should not treat others equally because some people need special treatment in order to succeed. (If you would like, you can write some reasons that support and some reasons that oppose the importance of*	Participants completed neither the reasons listing nor the priming tasks.		Importance of equality as a value Intergroup discrimination versus in-group favouritism (through playing a game involving decisions that could benefit the participant's group, or a hypothetical 'other' group that would also be affected).	No difference between equality primes in how they affected the rated importance of equality afterwards. In-group favouritism was significantly affected by priming condition. It was lower for participants in the reasons salient condition than for participants in the values salient or control conditions. The tendency to choose equality was not significantly different in the value salient versus control conditions.	168 psychology undergraduates at the University of Western Ontario.	Maio, G.R., Olson, J.M., Allen, L. & Bernard, M.M. (2001) Addressing discrepancies between values and behavior: The motivating effect of reasons. *Journal of Experimental Social Psychology, 37*, 104-117.

treating others equally.) We would like you to explain as clearly as possible how each of your reasons supports or opposes the importance of treating others equally. Try to organize your thoughts before you write." (b) **Value salience condition.** Through spending 20 mins doing 7 anagrams where the following equality-related words were hidden: equality, even, same, balance, parallel, fair, and identical.						
Participants were asked to list their **reasons** for 2 values: tradition (the "filler value") and helpfulness (the target!) [Reason salience condition].	Participants were asked to rate their **feelings** about these values: tradition and helpfulness, and a filler task (highlighting the adjectives in an		Helpful **behaviour** - e.g. the amount of time that participants offered in response to a confederate's request for voluntary participation in	Behaviour - Participants in the reasons salient condition offered significantly more time than did participants in the value salient condition.	58 psychology undergraduates from Cardiff University.	*As above.*

	irrelevant piece of writing). [Value salience condition].		additional research. and **attitudes** (e.g. donating money to children's charities and helping a friend with homework).	No difference on attitudes.		
Not being required to account for how you spend your time using a timesheet or similar reporting form.		*Being required* to account for how you spend your time using a timesheet or similar reporting form.	Willingness to volunteer scale e.g. *"I am willing to volunteer for an organization I care about without financial compensation for me"; "Even for an organization I care about, I am unwilling to work without getting paid"; "I'm unlikely to undertake any type of work without being paid"; "Volunteering is a worthwhile use of my time even if I do not get paid"; and "Without some financial compensation, it is not worth doing volunteer work".* Also giving time vs	Results measured a change in attitudes after graduating law school and working at a practice for 5 months. After controlling for general attitudes to volunteering, those that billed time were less likely to want to volunteer. They also were more likely to want to give money rather than time.	47 graduates from an elite American law school. $10 incentive.	DeVoe, S.E. & Pfeffer, J., 2010. The stingy hour: how accounting for time affects volunteering. *Personality & social psychology bulletin*, 36(4), pp.470–83.

			giving money as a measure of outsourcing volunteering.			
	Non-billing control (n=27).	Billing time treatment condition (n = 23). Participants engaged in nearly the identical consulting activity in both conditions, except participants in the billing time condition kept a log cataloguing "specifically what you have done and how much each office's budget should be charged for that time every six minutes." The participants in the billing time condition filled out a log with four columns: time interval that segmented time into 6-min increments, description of work that is being billed (personnel decisions or memo	Time predicted to be spent on various activities in the next year, including volunteering. Willingness to volunteer.	Billing prime predicted volunteering fewer hours than control and less willingness to volunteer. The latter fully mediated the former.	Fifty Canadian undergraduate commerce students were recruited to participate in a 2-hr session in exchange for course credit.	*As above.*

		writing), time spent for each office (Chicago, New York, or Los Angeles office), and amount charged to each office. On the top of the billing sheet participants were told to charge $0.25 for each minute. At the completion of the task, participants filled out a "Billing Summary" sheet where they tallied the total time billed to each office, total money charged to each office, and the total time billed/money charged for the session.				
	As above.	*As above.*	Volunteering to help stuff envelopes and mail some magazines after the completion of the task (max 15 mins).	Billing prime gave less self-reported time spent envelope-stuffing and this corresponded with how many envelopes were stuffed compared to control.	28 Canadian undergraduates for course credit. Feelings of fatigue and surveillance were accounted for (as billing could be more tiring).	*As above.*
	As above, except in groups of 3-8.	*As above, except in groups of 3-8.*	Interest and enjoyment in 10-	Billing prime led to NSD in enjoyment or	28 Canadian undergraduates for	*As above.*

			min follow-up task (writing a letter to a child) and willingness to take more envelopes to write later.	willingness, but to fewer additional envelopes taken.	course credit.	
	As in group study above. Also an additional control condition was added to the design. In this control condition, participants spent 35 min responding to 525 items drawn from different Big Five personality scales.	*As above.*	Volunteering during a 10-minute break on freerice.com, vs other internet activity. Self-efficacy scale Self-determination Aspirations Index	Billing prime caused less time to be spent volunteering. Also, through other analysis, it seems that people that valued money more were more affected by the prime.	119 Canadian undergrads for course credit or $10. Author interpretation: **what may be important for understanding individual choices about time use is not so much how much people work or how much they are paid but how they account for their time and activities while working.**	*As above.*
Designed to raise the value **Equality** in importance. This procedure (from Rokeach) involves pointing out possible inconsistent relationships	Value survey without equality manipulation.		**3 months later,** participants came back for a conversation with a black (or a white) person - where eye contact, physical distance and conversation was	Compare to the control group, people who'd had Equality raised in importance 3 months prior: - Ranked the value of equality as more important.	196 psychology undergraduates at Michigan State, University participated in the manipulation, 76 of which came back for the conversation.	Penner, L. A. (1971) Interpersonal attraction towards a black person as a function of value importance. *Personality, 2,* 175 - 187.

between two values (Freedom and Equality), and a value (Equality) and an attitude (attitude toward civil rights demonstrations). People rate their own values (Rokeach value survey) and then the experimenter shows them tables of what their peers' values and civil rights attitudes are, pointing out inconsistencies (e.g. these people rank freedom much higher than equality, and these people are unsympathetic to civil rights demonstrations, so maybe they are "more interested in their own freedom than freedom for others".) Participants are then invited to compare themselves with their 'peers'.			recorded. They also filled out 3 questionnaires: 1. Byrne's (1961) Interpersonal Judgment Scale (designed to see how much they liked the person). 2. Values questionnaire - self rating (on Rokeach value scale) and rating the perceived values of the black person. 3. Leary's (1956) Interpersonal Checklist, to measure of how similar the subject perceived the confederate's interpersonal behavior to their own.	- Maintained significantly more eye contact with the black person. Perceived value similarity and perceived behaviour similarity went in this direction too, but were NS. *This paper corroborates a lot of similar work done in the 1970s, particularly by Milton Rokeach, on priming a value through highlighting an inconsistency and then seeing how it affected attitudes and behaviour on race, democracy and civil rights.*		

| | | Control 1. **Music** - Same as mortality, but in respect to the experience of listening to music. | 2 types of threat primes:

1. **Mortality salience**

"Briefly describe the emotions that thoughts of your own death arouse in you." and "briefly describe, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead." | Free list 5 salient goals, e.g. the projects and concerns you have in your life. And then, participants rated how helpful their goals would be in reaching intrinisc (self-acceptance, affiliation, community feeling) or extrinsic futures (financial success, attractive appearance, social popularity). | Compared to controls, participants who wrote about death listed their goals as more strongly linked to extrinsic compared to intrinsic possible futures. | 84 psychology students at the University of Missouri. | Sheldon, K. M. & Kasser, T. (2008) Psychological threat and intrinsic goal striving. *Motivation and Emotion, 32* (1): 37-45. |
| | | Control 2 - **Positive economic future.**

Despite the current uncertainty, most economists believe that the U.S. economy is still strong. Although we may be in a temporary recession, there is no reason to believe that it will not fully recover. Indeed, given the U.S.'s position at the | **2. Economic insecurity**

As you know, the economic situation right now is quite uncertain. The stock market is still falling, and economists say that we have entered a recession. In fact it is unclear when the economy will recover, as new concerns about | Negative mood post-prime.

6 items from the Aspirations Index (3 intrinsic, 3 extrinsic). Presented both before and after the manipulation. | In people who read about economic insecurity, mood was significantly lower compared to controls.

Between T1 and T1, participants in the threat condition became relatively more extrinsic. | 447 social psychology students at the University of Missouri. | *As above.* |

| | *forefront of the information technology and genetic engineering fields, it seems likely that the economy will continue to expand throughout the next decade. We're interested in your own feelings about the prospect of graduating from college, and finding an excellent job in an expanding economy. Imagine that you graduated 6 months ago, and have already found the position of your dreams. You have plenty of money to purchase the things you want. In short, you have gone from being a college 'nobody,' to being 'somebody,' with a bright future.''* | *terrorism, airline bankruptcies, the cost of new security measures, and global instability more generally, may represent a serious and permanent drain upon the economy. We're interested in your own feelings about the prospect of graduating from college, and being unable to find a job. Imagine that you graduated six months ago, but have still found nothing except low-income temporary employment, despite all your efforts. You are barely scraping by. In short, instead of being ''somebody'' with a bright future, it seems you are a McDonalds ''nobody.''* | | | | |