

Alexander Neaman, Pablo Díaz-Sieffer, Elliot Burnham, Mónica Castro, Sarah Zabel, Elvira A. Dovletyarova, Claudia Navarro-Villarroel, Siegmar Otto

Catholic religious identity, prosocial and pro-environmental behaviors, and connectedness to nature in Chile

GAIA 30/1 (2021): 44 - 50. DOI: 10.14512/gaia.30.1.9

Supplementary Material

Supplementary Table 1. Catholic identity scale used in the first study.


Supplementary Table 2. Pro-environmental behavior scale used in the first study.

Supplementary Table 3. Prosocial behavior scale used in the first study.

Supplementary Table 4. Connectedness to nature scale used in the second study.

Supplementary Table 5. Pro-environmental behavior scale used in the second study.

Contact:

Alexander Neaman, PhD | Universidad Austral de Chile | Facultad de Ciencias Agrarias y Alimentarias | Centro Transdisciplinario de Estudios Ambientales y Desarrollo Humano Sostenible (CEAM) and Instituto de Ingeniería Agraria y Suelos | Campus Isla Teja | Valdivia 5090000 | Chile | +56 63 2221239 | alexander.neaman@uach.cl |  <https://orcid.org/0000-0002-1819-0872>


Pablo Díaz-Sieffer, Msc | Centro Regional de Investigación e Innovación para la Sostenibilidad de la Agricultura y los Territorios Rurales (CERES) | Quillota | Chile | p.diaz.sieffer@gmail.com

Elliot Burnham | elliot.burnham.b@gmail.com |  <https://orcid.org/0000-0003-1059-7026>

Mónica Castro, Msc | monica.castro@pucv.cl

both: Pontificia Universidad Católica de Valparaíso | Escuela de Agronomía | Quillota | Chile

Sarah Zabel, Msc | sarah_zabel@web.de |  <https://orcid.org/0000-0001-7056-7377>

Siegmar Otto, PhD | Otto von Guericke University Magdeburg | Institute of Psychology | Magdeburg | Germany | siegmar.otto@ovgu.de |  <https://orcid.org/0000-0001-9645-2586>

both: University of Hohenheim | Institute of Education, Work and Society | Stuttgart | Germany

Elvira A. Dovletyarova, PhD | Peoples Friendship University of Russia (RUDN University) | Department of Landscape Design and Sustainable Ecosystems | Moscow | Russia | dovletyarova-ea@rudn.ru

Claudia Navarro-Villarroel, PhD | Universidad de Valparaíso | Instituto de Estadística | Valparaíso | Chile | claudia.navarro@uv.cl

copyright

© 2021 A. Neaman et al.; licensee oekom verlag. This article is published under the terms of the Creative Commons Attribution License CC BY 4.0 (<http://creativecommons.org/licenses/by/4.0>).

Supplementary Table 1. Catholic identity scale used in the first study.

N°	Items	2014	2019	Infit MS	Delta
REL10	I fast on Ash Wednesday and Good Friday.	x	x	0.87	2.78
q36	I read the Bible.	x		1.13	2.32
REL9	I observe Easter Lent.	x	x	0.67	1.96
REL11	I perform voluntary work at my church.	x	x	0.98	1.82
REL15	I go to Confession at least once a year.	x	x	0.80	1.76
q37	I go to Mass.	x		0.87	1.32
REL25	I genuflect before sitting down in church.	x	x	1.10	0.70
REL1	I genuflect when passing before the tabernacle.	x	x	0.83	0.52
REL17	I give money to my church.	x	x	1.02	0.39
REL20	I have read the catechism for myself.	x	x	0.88	0.24
REL19	I pray to the saints to ask for their help.	x	x	0.94	0.00
REL23	I bring up my children in the Christian faith.	x	x	1.19	-0.02
q35	I pray.	x		1.03	-0.23
REL16	I go to church on religious holidays.	x	x	0.81	-0.24
REL8	I have had my Confirmation.	x	x	1.08	-0.35
REL5	Christian relics (the remains of saints) have power.	x	x	1.03	-0.40
REL13	In my house, I have a cross hanging on the wall.	x	x	1.13	-0.66
REL14	I have rosary beads.	x	x	0.90	-0.87
REL4	When I enter church, I make a sign of the cross.	x	x	0.71	-1.38
REL12	I have done intercessions for someone who has died, praying and making requests for them.	x	x	0.97	-1.69
REL7	I have done my first communion.	x	x	0.98	-3.04
REL6	I am baptized.	x	x	0.78	-4.93

Here and below, items used in each of the surveys (2014 and 2019) are marked in x. Likewise, item difficulties (delta) are expressed in logits, the basic units of Rasch scales. Larger logit values indicate higher score on the respective scale. Conversely, a smaller logit value indicates smaller score on the respective scale. Infit MS (mean square) reflects the relative discrepancy in the variation between model prediction and observed data independent of the sample size. Perfect model prediction is expressed by a MS value of 1.0. MS values above 1.0 indicate excessive variation (e.g., a value of 1.2 indicates 20% excessive variation). A commonly acceptable upper value is 1.2.

Supplementary Table 2. Pro-environmental behavior scale used in the first study.

N°	Items	2014	2019	Infit MS	Delta
GEB5	In the shower, I shut off water while soaping up and then turn it on again to rinse.	x	x	0.83	3.94
q75	I contribute financially to environmental organizations.	x		0.90	3.33
GEB31	I bought solar panels to produce electricity.	x	x	0.96	3.10
GEB38	I contribute financially to environmental organizations.		x	0.93	2.75
GEB27	I am a member of an environmental organization.	x	x	0.85	2.67
GEB39	I buy foodstuffs in bulk (for example, rice, noodles, nuts, beans, etc.) and use my own containers.		x	0.88	2.21
GEB2	I buy natural products and/or products with ecological labeling (for example, detergents, shampoos, etc.).		x	0.78	2.19
GEB3	I buy beverages in disposable containers (plastic or can).		x	1.08	2.14
GEB40	I have attended environmental classes to be more informed.		x	1.05	1.88
GEB32	I produce my own organic food (fruits, vegetables, honey, etc.).	x	x	0.99	1.84
q70	If offered a plastic bag in a store, I take it.	x		1.01	1.59
q54	I use renewable energy sources.	x		0.96	1.59
GEB34	I boycott companies with poor ecological record.		x	0.89	1.51
q53	I got a price quote to install solar power.	x		0.96	1.39
GEB26	I compost my organic waste (food scraps, fruit and vegetable waste) and use it to fertilize plants.		x	0.98	1.29
GEB10	I recycle or reuse paper.	x	x	0.86	1.14
q68	I drive on freeways at speeds under 100 km/h.	x		1.11	1.12
GEB29	I prefer air travel over automobile and/or bus for long trips (more than 100 kilometers) within Chile.		x	1.25	1.08
GEB20	I buy organic food.	x	x	1.03	1.08
GEB37	I collect used cooking oil in a container and then take it to a collection point.		x	0.79	1.06
GEB35	I usually carpool with one or more persons to get to work or place of study.		x	0.85	0.92
GEB13	I throw packaging including cardboard in the garbage.		x	0.97	0.88
GEB12	I throw cans in the garbage.		x	0.93	0.80
GEB6	I read about environmental issues.	x	x	0.86	0.69
q66	I use my car for intercity or urban travel.	x		1.13	0.57
GEB11	I recycle or reuse glass bottles and/or jars.	x	x	0.86	0.55
GEB7	I buy products in refillable containers.	x	x	0.96	0.47
q74	I have pointed out unsustainable behavior to others.	x		0.88	0.42
GEB9	For nearby travel, I use public transportation, ride a bike or walk.		x	1.36	0.31
GEB18	I buy seasonal produce.		x	1.00	0.24
GEB16	I recycle or reuse plastic bottles and/or jars.		x	0.85	0.07
q46	I use a chemical air freshener in my bathroom.	x		1.01	0.07
GEB21	I use wood heating.		x	1.44	0.03
q55	I refrain from owning a car.	x		0.92	0.02

Supplementary Table 2 (continued).

N°	Items	2014	2019	Infit MS	Delta
q78	I buy cooked and frozen foods, ready to heat.	x		1.01	-0.14
GEB15	I have tried to make my family and/or friends more environmentally friendly.		x	0.87	-0.14
q77	I buy bleached toilet paper.	x		1.25	-0.30
GEB36	I own a fuel-efficient automobile (more than 13 km per liter).	x	x	1.14	-0.36
q67	I don't use the pre-wash cycle for laundry.	x		0.95	-0.38
GEB14	I buy soft drinks or beer in returnable containers.	x	x	1.09	-0.41
q63	I buy beverages in cans.	x		0.97	-0.45
q56	I am a member of a carpool.	x		1.02	-0.60
q69	For longer journeys (more than 500 km), I take an airplane.	x		1.12	-0.60
GEB1	I turn off TV, computer and other electrical devices when they're not in use.		x	1.07	-0.69
GEB33	I throw dead batteries in the garbage.	x	x	0.93	-0.74
q43	I use fabric softener for laundry.	x		1.08	-0.77
q52	I have looked into the pros and cons of private solar power.	x		0.93	-1.02
q57	I make an effort to minimize fuel consumption when driving.	x		1.02	-1.09
q48	In hotels, I have the towels changed daily.	x		1.05	-1.16
GEB24	I use a clothes dryer all year round.		x	0.96	-1.36
GEB25	When I brush my teeth, I keep the water running.		x	1.10	-1.44
q60	I ride a bicycle or take public transportation to work or school.	x		0.98	-1.47
q49	I own energy efficient household devices.	x		0.99	-1.57
GEB8	I bring my own reusable bags for shopping.		x	0.83	-1.58
GEB17	I turn down heat when I leave home for more than 1 hour.		x	0.89	-1.70
q71	For nearby travel (around 30 kilometers), I use public transportation or ride a bike.	x		0.95	-1.83
GEB19	I have soaking baths in a bathtub.		x	1.16	-1.85
GEB22	I reuse my shopping bags.	x	x	0.91	-2.01
q64	I use an oven cleaning spray to clean my oven.	x		0.95	-2.11
GEB4	I wait until I have a full load before doing my laundry.	x	x	0.90	-2.18
q62	I bathe in the tub, instead of taking shower.	x		0.96	-2.32
GEB23	In the winter, I keep the heat on so that I do not have to wear a sweater.	x	x	0.94	-2.62
GEB28	I change my towels daily.		x	0.72	-3.16
GEB30	After a picnic, I leave the place as clean as it was originally.	x	x	0.89	-4.26
q45	After meals, I dispose of leftovers in the toilet.	x		0.92	-4.62

Supplementary Table 3. Prosocial behavior scale used in the first study.

N°	Items	2014	2019	Infit MS	Delta
ALT12	I have given a stranger a lift in my car.	x	x	0.96	2.20
ALT8	I have donated blood.	x	x	1.00	2.20
ALT18	I have comforted a crying stranger.		x	0.97	1.42
q107	I have spontaneously offered to look after a neighbor's pet or children without remuneration.	x		0.91	1.31
ALT3	I have changed money for a stranger.	x	x	1.02	1.16
ALT1	I have helped push a stranger's broken car.	x	x	1.00	1.01
ALT9	I have helped carry a stranger's belongings (bags, parcels, etc.).	x	x	0.84	0.52
q110	I have helped an acquaintance to move house.	x		0.97	0.49
ALT20	When a stranger asks me something, I continue on my way as if I did not hear them.		x	1.09	0.40
ALT7	I have done volunteer work for a charity.	x	x	0.98	0.39
ALT16	I have offered to help a handicapped or elderly stranger across the street.	x	x	0.88	0.39
ALT5	I have given money to a stranger who needed it (or asked me for it).	x	x	0.97	0.24
ALT4	I have given money to a charity or fundraising campaign to help somebody.		x	0.96	0.19
q104	I have let a neighbor, whom I did not know very well, borrow an item of some value to me (e.g., a dish, tools, etc.).	x		0.93	0.10
ALT15	I refuse help from an unknown person		x	1.16	0.07
q103	I have pointed out a clerk's error (in a bank, at the supermarket) in undercharging me for an item.	x		1.06	-0.09
ALT6	I have donated goods or clothes to a charity.	x	x	0.90	-0.39
q94	I have given money to a charity.	x		1.03	-0.40
ALT10	I have delayed an elevator and held the door open for a stranger.	x	x	0.97	-0.69
ALT11	I have allowed someone to go ahead of me in a lineup (driving a car, in the supermarket).	x	x	0.94	-0.94
ALT14	I have bought a "Teletón" product.	x	x	1.23	-1.17
ALT2	I have given directions to a stranger.	x	x	0.95	-1.26
ALT19	I would help a stranger who falls down on the street.		x	0.74	-1.27
q106	I have helped a classmate whom I did not know very well with a homework assignment when my knowledge was greater than theirs.	x		0.98	-1.66
ALT13	When I receive extra change, I give it back to the cashier		x	1.12	-2.06
ALT17	I have offered my seat on a bus or train to a stranger who was standing.	x	x	0.97	-2.14

Supplementary Table 4. Connectedness to nature scale used in the second study.

N°	Items	Infit MS	Delta
CN101	I mimic animal behavior: for example, the way a vulture walks.	1.14	2.01
CN117	I get up early to watch the birds.	0.79	1.93
CN120	I hug the trees.	0.92	1.23
CN102	I get up early to watch the sunrise.	1.07	1.20
CN114	I listen to the sounds of nature (for example, recorded on a CD / mp3 or on the Internet).	1.05	0.93
CN103	I mimic the sounds of animals.	1.14	0.72
CN110	I talk to plants.	1.02	0.28
CN118	I go to secluded beaches.	0.98	0.16
CN108	I practice outdoor sports (trekking, surfing, kayaking, mountain biking, etc.).	1.11	0.14
CN109	I take time to listen to the birds in the morning.	0.82	-0.18
CN116	I take time to consciously smell flowers.	0.87	-0.20
CN105	I camp in nature.	1.14	-0.33
CN119	I go hiking in nature reserves and/or forests.	0.88	-0.39
CN112	I picnic in nature.	0.92	-0.48
CN104	I walk on the grass without shoes.	1.10	-0.60
CN115	If there is an insect, such as a fly, in my home, I try to catch and release it rather than kill it.	1.08	-0.65
CN107	I take time to watch the clouds pass by.	0.85	-0.95
CN106	I watch TV programs or internet videos about nature.	1.05	-1.53
CN113	I take time to watch the sunset.	0.77	-1.57
CN111	I deliberately take time to watch stars at night.	0.85	-1.74

Supplementary Table 5. Pro-environmental behavior scale used in the second study.

N°	Items	Infit MS	Delta
GEB31	I bought solar panels to produce electricity.	1.01	2.69
GEB38	I contribute financially to environmental organizations.	0.93	2.09
GEB27	I am a member of an environmental organization.	0.98	1.69
GEB32	I produce my own organic food (fruits, vegetables, honey, etc.).	0.96	1.57
GEB40	I have attended environmental classes to be more informed.	0.94	1.44
GEB20	I buy organic food.	0.94	1.40
GEB3	I buy beverages in disposable containers (plastic or can).	1.05	1.39
GEB39	I buy foodstuffs in bulk (for example, rice, noodles, nuts, beans, etc.) and use my own containers.	0.97	1.30
GEB34	I boycott companies with poor ecological record.	0.91	1.13
GEB2	I buy natural products and/or products with ecological labeling (for example, detergents, shampoos, etc.).	0.93	1.11
GEB10	I recycle or reuse paper.	0.91	1.04
GEB26	I compost my organic waste (food scraps, fruit and vegetable waste), and use it to fertilize plants.	0.89	1.00
GEB12	I throw cans in the garbage.	0.99	0.95
GEB13	I throw packaging including cardboard in the garbage.	1.01	0.92
GEB37	I collect used cooking oil in a container and then take it to a collection point.	0.95	0.90
GEB5	In the shower, I shut off water, while soaping up and then turn it on again to rinse.	1.06	0.88
GEB6	I read about environmental issues.	0.81	0.31
GEB7	I buy products in refillable containers.	0.86	0.22
GEB33	I put dead batteries in the garbage.	1.19	0.19
GEB21	I use wood heating.	1.16	0.18
GEB14	I buy soft drinks or beer in returnable containers.	1.01	2.69
GEB16	I recycle or reuse plastic bottles and/or jars.	0.93	2.09
GEB23	In the winter, I keep the heat on so that I do not have to wear a sweater.	0.98	1.69
GEB11	I recycle or reuse glass bottles and/or jars.	0.96	1.57
GEB28	I change my towels daily.	0.94	1.44
GEB24	I use a clothes dryer all year round.	0.94	1.40
GEB29	I prefer air travel over automobile and/or bus for long trips (more than 100 kilometers) within Chile.	1.05	1.39

Supplementary Table 5 (continued).

N°	Items	Infit MS	Delta
GEB25	When I brush my teeth, I keep the water running	1.15	-0.25
GEB35	I usually carpool with one or more persons to get to work or place of study.	0.99	-0.39
GEB15	I have tried to make my family and/or friends more environmentally friendly	0.83	-0.44
GEB36	I own a fuel-efficient automobile more than 13 km per liter)	1.05	-0.80
GEB18	I buy seasonal produce	0.96	-1.14
GEB9	For nearby travel, I use public transportation, ride a bike or walk	1.03	-1.18
GEB8	I bring my own reusable bags for shopping.	0.83	-1.31
GEB1	I turn off TV, computer and other electrical devices when they're not in use.	0.97	-2.03
GEB4	I wait until I have a full load before doing my laundry	0.93	-2.11
GEB17	I turn down heat when I leave home for more than 1 hour.	0.95	-2.22
GEB19	I have soaking baths in a bathtub.	1.03	-2.60
GEB22	I reuse my shopping bags	0.88	-2.89
GEB30	After a picnic, I leave the place as clean as it was originally	0.91	-4.67