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In Search of Value Literacy: Suggestions for the Elicitation of Environmental Values¹

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ABSTRACT

This paper recognises the many contributions to work on environmental values while arguing that some reconsideration of elicitation practices is warranted. It argues that speaking and thinking about certain environmental values, particularly ethical expressions, are ill-matched with the affectively neutral, direct question-answer formats standard to willingness-to-pay and survey methods. Several indirect, narrated, and affectively resonant elicitation tasks were used to provide study participants with new opportunities to express their values. Coded results demonstrate that morally resonant, image-based, and narrative-style elicitation tasks help respondents articulate a broader range of noncost and nonutilitarian environmental values. However, it was found that elicitations of this kind are most useful when presented in a affectively subtle and noncontroversial form. Several suggestions for synthesising these methods with more structured forms (e.g., surveys, constructed preferences, etc.) are offered.

KEYWORDS

Environmental ethics and values, emotion and value, value deliberation, value elicitation methods, noneconomic value, narrative valuation, public participation

1. INTRODUCTION

The last decade has witnessed a flurry of research aimed at developing the means for eliciting from stakeholders their values regarding nature (broadly construed), specific environmental goods (a peregrine falcon) or cherished places (Yellowstone National Park). Contributions to this *environmental values* literature have been generated from most corners of the social, psychological, and

economic sciences as well as from philosophy from which has emerged the sub-discipline: environmental ethics. Predominant among valuation techniques are cost-benefit analyses (CBA), including contingent valuation's (CV) willingness-to-pay (WTP) and willingness-to-accept (WTA) approaches. These cost-centred approaches are designed to assign cash values to different environmental goods, services or functions. Criticism that this definition of value is excessively economic and that such value-assignment tools are ill-suited to a fuller articulation of values (particularly ethics-based formulations of value) is one reason for the growing interest in modified or alternative studies of value. Despite this intention on the part of researchers, it remains the case that many study participants are not especially good at, or not given the chance of, giving voice to values that are ethically-charged, deeply held, privately defended or not available to consciousness at a moment's notice. This inarticulacy problem is a significant one, because an absence of opportunities for elaborated discussions of environmental values serves either to misrepresent the public or to relegate discussion to elite and thus nondemocratic venues (such as dialogues among policy makers, public agency managers or, for that matter, ethicists). Tangible, rational values such as those which specify nature as biologically and economically beneficial are readily defined in most elicitation contexts. In contrast, less-tangible expressions of value, such as the proposition that rights should be extended to nature or that wild nature is considered sacred to some people, are relegated to quiet corners.

This paper constitutes a first step toward something we might call *value literacy*—the ability for study participants to verbalise the nonutilitarian qualities and values that best express why nature matters. It is based on the premise that the articulacy problem arises from a poverty of opportunities for expression and not a poverty of values on the part of stakeholders. It begins by arguing that most value elicitation tools are unnecessarily stripped of the very qualities—emotional tone and moral opinion—that furnish expressions of value with meaning and vitality. It further argues that conventional means for expressing or eliciting value rely too heavily on direct question-answer formats. These practices avoid the very language and style that many people use to discuss values, that is, the conversational talk that encompasses everyday reflections on beliefs and values. Empirical evidence is then presented from a set of studies designed to provide participants with better discursive opportunities for the articulation of environmental values. By 'better opportunities' I mean value-elicitation opportunities, frames, or contexts that resist the tendency to fit the articulation of values into economic expressions, that seek alternatives to direct question-answer formats, and/or that denude value expressions of relevant moral or affective content. By 'environmental values' I mean the direct and indirect qualities of natural systems that are important to the evaluator, including ethical expressions of value.

2. ENVIRONMENTAL VALUES

2.1 The monetary valuation of environmental goods

Briefly stated, conventional value-elicitation practices have been criticised for the assumption that the public majority endorses and is satisfactorily portrayed by rational, economic expressions of the value of nature. This includes the assumptions that monetary expressions (a) reflect that which is held dear, worthy of protection and ethically or socially esteemed, and (b) represent the benefits of nonmarket goods (e.g. a favourite place, clean air and water, freedom, beauty). Further criticisms contest the meaning and stability of WTP responses. Critics refer, in particular, to the many 'protest zeros' and practically impossible money values offered by study participants. These responses indicate that some values are 'protected' and thus not amenable to tradeoffs or pricing efforts (Baron and Spranca 1997) or speak to moral satisfaction or intensity of feelings about environmental protection rather than a consumer's preferred payment for environmental goods (Kahneman and Knetsch 1992; Ritov and Kahneman 1997; Sagoff 1998). That WTP responses for nonmarket goods (e.g. environmental goods) are labile or unstable is confirmed by the many studies demonstrating that subtle changes in question wording or phrasing alters the magnitude of the offered response (Gregory, Lichtenstein and MacGregor 1993; Ritov and Kahneman 1997) or results in the reversal of a respondent's initial preference (Irwin et al. 1993; Slovic 1995).

2.2 Ethical and social science investigations of value

Alternative thinking about environmental values can be attributed to social scientists concerned with the value-underpinnings of preferred decisions and behaviour, and ethicists advancing anthropocentric and ecocentric defences of nature. Ethicists are not concerned with eliciting values from public groups. Their goal is to consider the philosophical basis for assigning value and they have thus argued effectively that nature (and/or its component parts) has instrumental and, importantly, intrinsic moral value. Even if due to consciousness, only humans are moral agents (and thus can evaluate things), that is not to say that ecosystems, organisms, species, etcetera, are not morally good or possess certain kinds of value in and of themselves (Callicott 1984, 1986, 1995; Nash 1989; Norton 1991; Rolston 1988, 1994; Sagoff 1988, 1991; Stone 1987).

Social scientists generally elicit value from public groups using interview and survey methods. The products of this work suggest an escalation of concern for the environment over time and across social groups and find that values once thought extremely radical are now held by a broad variety of individuals and groups (Dunlap and Scarce 1991; Kellert 1996; Satterfield and Gregory 1998). Others have found that values as action guides (following Rokeach 1973) can be

separated into a tripartite system: ego-centric, socio-centric and bio-centric values (Merchant 1992; Stern and Dietz 1994) or economic, social, and universal value sets (Axelrod 1994); and some distinguish further between materialist and post-materialist value orientations (Inglehart 1995; Inglehart and Abramson 1994). Kempton and his colleagues (Kempton, Boster and Hartley 1995) have pointed to the importance of mental or cultural models of the environment and their relationship to environmental values, whereas Earle and Cvetkovich (1995: 206–8) argue that values are embedded in the emotionally rich stories or narratives through which we construct our pasts and our futures.

2.3 Further considerations in the elicitation of value

Oddly, though ethicists are very concerned with the moral arguments for advancing an environmental ethic, social scientists working to elicit values from study participants have not yet fully developed the moral qualities or sensibilities acknowledged in their definitions of values as action guides. Perhaps this is because the term ‘moral’ implies thoughts privately held or conjures up political posturing (be it left- or right-wing) that counters value-neutral approaches to human behaviour. Earle and Cvetkovich (1995: 212) point to the relationship between narratives and moral development. Axelrod (1994: 86) refers to values as standards of ‘oughts and shoulds’, a definition that can be interpreted as morally endowed. Kempton et al. (1995) include ‘moral’ in their definition of values – ‘we use the term values to refer to moral guidelines’ – and they do consider this moral dimension though their emphasis is primarily on cultural models and lay (versus expert) theories about global warming.

Thus, although many social scientists reference ‘moral’ to emphasise the point that values are held with conviction, most fail to develop further the moral dimension of values and thus avoid expressions of value that might be revealed by a focus on this important sense of conviction.² A value is ultimately held because it matters to the holder; it embodies definitions of behaviour or actions as good or bad, right or wrong. It is one of the reasons people engage in controversies and/or join activist or stakeholder groups. Conceptions of how the world ought to look or how society ought to behave – that is, an implied model for action – are implicit, if not explicit, parts of every value system. This implied action or way of being is an essential component of values, and thus warrants attention when eliciting values.

Lastly, most value elicitation practices begin with the premise that we can ask respondents direct questions and receive direct answers about values, or that we can draw on public rhetoric about the environment to generate measurable statements of value.³ It is a viable place to begin and there is often no substitute for the efficiency and statistical rigour of survey methods. But the simple question-answer premise is not fully upheld by research: three linked problems

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arise. First, we know that values for nonmarket (especially environmental goods) can be poorly defined in the respondent's mind; assigning value is thus very sensitive to question wording and the employed elicitation device (Fischhoff, Slovic and Lichtenstein 1980; Gregory, Lichtenstein and Slovic 1993; Payne, Bettman and Johnson 1992). Second, elicitation contexts can (theoretically speaking) be stripped of all hints, clues, or value-relevant information, but such practices so fully expunge the context of meaning that empty or shallow responses follow. Three, if context is necessary, what should that context look like?

One solution is the greater use by contingent valuation practitioners of focus groups in pre-survey-design stages to determine participants' factual prerequisites and then to present that information using maps, fact sheets, or posters before WTP values are elicited (e.g. Desvousges and Frey 1989; Brouner, Powe, Turner, Bateman and Langford 1999). This undoubtedly improves the context-specificity and realism of willingness-to-pay studies but does not address the many studies (cited above) that question the use in the first place of cash sums as value expressions.

A second, very promising, constructed preferences approach has been developed by psychologists and decision analysts (Gregory, Lichtenstein and Slovic 1993; Gregory and Slovic 1997). Because values are very sensitive to question wording, proponents of constructed preferences argue that values should be carefully constructed during the elicitation process using a logical and defensible sequence of steps. Typically, the decision context is carefully specified; thereafter elicitation is tightly-structured around participants' stated objectives (i.e. answers to the question 'what matters' and 'why') and the measurement of these objectives so that different tradeoffs and policy alternatives can be weighted (evaluated). The success of value-constructive techniques is partially due to the rationalisation of the valuation (and decision) process: the quality of participants' thinking is improved by the careful structuring of elicitations.

The contribution introduced by constructive processes should not be overlooked, but the problem of articulating ethical values may not be entirely served by rationalising and structuring the thinking that underlies a valuation problem or by a focus on factual omissions. One needs also to consider the possibility that some values cannot or should not be rationalised (at least not initially); to do so is to risk marginalising value positions based on affective investment or moral conviction. Rationalising processes may compel respondents to avoid expressions of value that come across as, to put it bluntly, flakey, despite the possible importance of ethical propositions about the rights of nature and spiritual investments in natural areas. These values may be more commonly embedded in, and suited to narratives, to our everyday impassioned and storied talk about nature and meaning. Perhaps, then, it is only through such talk that we can elicit values that belong to this philosophic-spiritual-affective realm.

3. ELICITING VALUE

3.1 Narrated values

The purpose hereafter is to test new possibilities for eliciting ethically centred environmental values which also require that respondents come up with these values themselves (i.e., articulate them) rather than simply recognise statements of belief or worth with which they can agree. Three tasks were developed for this purpose. Attention is paid to the elicitation of all categories of values but especially to values that are nonmonetary, emotional, moral, or relevant only to the extent that they are understood in conjunction with the kinds of resource-dispute contexts and natural places about which value debates arise. Each task recognises that storied forms rather than direct question-answer formats might better serve value reflection and expression, as some values are inherently difficult to express as declarative statements.

3.2 The emotion-values task

A first task exploited the assumption that values are emotionally driven expressions. Callicott (1984: 305) has argued that value-in nature is 'grounded in human feelings' and 'projected' onto the natural object that 'excites' the value [held]. Other scholars have found that emotion is often the basis for meaning in otherwise abstract choices or judgments (Finucane, Alhakami, Slovic and Johnson 2000; Kida and Smith 1995) and that affect is essential to a variety of cognitive processes (Epstein 1994; Loewenstein 1996; Slovic, Finucane, Peters and MacGregor in press). In a full exploration of the relation between emotions, ethics, and values, Stocker and Hegeman (1996) conclude that 'emotions reveal value' and find that 'emotions are internal to value, in fact so internal that they are inseparable from it' (p. 1). Finally, a subset of psychological anthropologists have spent much of the last decade exploring the relationships between emotional language and culturally specific moral systems (Shweder and Levine 1984; Planalp 1999; Satterfield in press). Rosaldo (1980) has argued, in her much cited *Knowledge and Passion: Ilongot Notions of Self and Social Life*, that talk about emotions is encoded (like symbols) with information about a culture member's understanding and moral organising of his or her social world. Inspired by Rosaldo, Lutz (1988) explored cognitive structures or implied scenarios for action that frame expressions of emotion – scenarios that are indicative of a culture's moral system. Thus, as Lutz found, to say *I am angry about a certain person's behaviour* is to describe a scene in which one mode of behaviour is promoted (the implied desired behaviour) and another dismissed (the behaviour that produced anger). Emotions are thus said to be discursive expressions of moral evaluations, important forms of evaluative appraisal.

To test the proposition that emotion scenarios might be appropriately used to elicit values, four scenarios were prepared,⁴ each of which employed affect when

narrating a passage about the dispute over logging in the Pacific Northwest. No scene or narrative was longer than one page. Two of these scenes can be summarised as 'pro-logging', two as 'anti-logging'. In one of the pro-logging scenes the emotional tone conveyed by the narrator was subtle; it invited the reader to know something of the narrator's moral worldview and experience. The emotional tone in the other pro-logging scene was affectively charged: its rhetoric was characterised by an overt mood of anger and outrage. Two parallel 'anti-logging' scenes were developed: one used a subtle moral and affective tone, the other an overt tone.

Participants in this task (and other tasks described later) were solicited from the local university community using an ad in the student newspaper. Each received only one scenario. They were instructed to read the scene and to (a) write about their emotional responses to the story, and (b) offer a detailed explanation of their responses. The tasks asked what the respondent felt and how that feeling was interpreted, explained, and justified. It was surmised that an explicit focus on emotion would tap a rich source of values in all their moral complexity, values unencumbered by methods that attempt to abstract, and thus sometimes obstruct, expressions of values. In total, 60 participants (26 male, 32 female, 2 unidentified) completed these tasks. All participants were paid a small fee for their time. The text of their responses was carefully analysed and coded for its value content as spelled out in Section 4.2 below.

3.3 Values and morals

A second indirect value-elicitation task was motivated by an earlier study (Satterfield 1997) of the highly publicised controversy in the Pacific Northwest between activist loggers and environmentalists. That work revealed a tendency for activists on both sides to judge expert knowledge as morally good or bad or to offer moral evaluations of public decision processes. When discussing forest management, loggers valued the individuals and scientists whose understanding of the forest was based on hands-on, visually obtained experience in the woods, whereas environmentalists frequently invoked enigmatic qualities of forest ecosystems and endorsed scientific knowledge rooted in abstract, often mysterious and visually inaccessible conceptions of nature. These are just two moral evaluations of the 'correct' or 'just' (in the speaker's eyes) way to approach or value forest systems. These views emerged during unstructured interviews in which the informants were asked to solve the forest dispute in any manner he or she saw fit. This provided the informant with the opportunity to declare their understanding of a just or moral world; it was a way of saying 'a fair (i.e., moral) world looks like this to me, and if I were "supreme decision-maker" this is what I would do'. It also provided participants with an opportunity to discuss the moral standing of nature, to suggest whether or not nature has rights or deserves the right of protection.

A new scenario was then written which presented a problem or conflict that had to be solved. The conflict concerned the harvesting of a rare (and threatened) species of pine. Participants were given a one-page descriptive passage about a substance found in the inner bark of a species of pine known to send 50% of lymphoma and leukaemia patients into remission. They were told that logging the small quantity of remaining pine would effectively eradicate the species and the ecosystems that depend on it. They were also given the opinions of persons and activists on both sides of the dispute – medical organisations pressing the federal governments to allow intensive logging, conservationists, patient groups, etc. Participants in this task ($n = 48$; 19 male, 28 female, 1 gender unstated) were asked: (a) how they would resolve the conflict, (b) how they explained their actions as ‘just’, ‘fair’, or ‘morally defensible’, and (c) how they justified their selection of persons (lay or expert) who should be allowed to help with the dispute’s resolution. (It was hoped that individuals’ judgments about who should decide policy would contain moral evaluations of goods in nature and appropriate human behaviour toward other humans and toward nature.) Again, the texts of these responses were carefully analysed and coded for their value content, as spelled out in Section 4.2 below.

3.4 Symbolic explorations of value

A third indirect elicitation method incorporated the seemingly disparate ideas of resource economists and symbolic anthropologists. Resource economists have coined the term ‘existence value’ to represent goods extant in the natural world whose continued existence we appreciate. Larson (1993) has referred to existence value as a catch-all phrase for non-consumptive goods. More fully, existence value expresses the positive regard for a favourite place (e.g. Yellowstone National Park) or some unknown place or animal, even though one may never see, visit or materially benefit from that good. In the words of one environmentalist: ‘I simply need to know that it’s [old growth in Tongass National Forest] out there’ (Satterfield 1997: 457).

The concept of existence value expresses, literally, direct appreciation for the existence of a place. But it may also capture the fact that certain natural phenomena are valued not for any inherent material qualities but because those phenomena symbolise something of meaning and value to the public. Moreover, that meaning may be intuitively sensed but not necessarily consciously interpreted or verbalised. If we can understand what nature (Yellowstone, Tongass, a sea turtle, etc.) symbolises, we shall also understand something about values. Symbolic anthropology’s leading scholar has argued that values are stored in symbols. ‘Such symbols ... are felt somehow to sum up, for those for whom they are resonant, what is known about the way the world is, the quality of the emotional life it supports, and the way one ought to behave while in it’ (Geertz

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1973: 127). This stresses our conception of values as moral and enigmatic expressions of the 'right' way of being and behaving toward one's world.

In grasping, methodologically, something as slippery, even elusive, as the symbolic and thus value content of natural phenomena, the intent was to avoid direct and futile questions like 'What does nature symbolise for you?' and turn instead to projective-style tasks. These projective tasks mimicked a 'thematic apperception test' (TAT) via the use of two evocative 8" x 10" colour photographs (an old-growth forest and a clear cut). The old-growth photograph depicted a lush and densely vegetated grove of moss-covered coniferous trees (mainly cedar and fir) of the type found in the coastal ranges of Oregon, Washington, and British Columbia. A single individual stood in the bottom-left corner of the photo; his/her expression is not discernible. The clear-cut photo depicted a nonaerial view of a logged and slash-burned site. A single individual stood at the bottom centre of the photo; his/her back was to the photographer; the individual's expression is not discernible.

Participants were asked to look at the photograph and write a story that described the thoughts and experiences of the person in the photograph. The premise is that participants will identify with the figure in the photograph, project his or her story onto the figure, and in so doing reveal important concepts. When constructing their narratives, participants were asked to write a story that addressed what the person in the photograph is thinking and feeling, how the person came to be in the setting, how the person will integrate the experience into his or her daily life, and what the person will do when he or she leave this setting. Thirty-two participants (9 male, 23 female) completed the old-growth photo task; 35 participants (10 male, 25 female) completed the clear cut photo task. The texts of these narrative responses are part of the overall collection of material analysed for value content, as outlined in Section 4.2.

3.5 Research questions

Several of my research questions and project goals have been implied above; for clarity's sake each one is summarised below.

1. If we provide value elicitation conditions that (a) do not avoid symbolic, moral, or emotional content and (b) use indirect and open-ended elicitations to encourage the kind of narrative and dialogic talk that reflects value discussions in everyday life, will participants be relatively value literate? That is, will they be able to offer a breadth of value positions not otherwise constrained by economistic approaches?
2. What categories of value dominate participants' responses (philosophical or spiritual, biodiversity principles, existence value, etc.)? What categories of value stand out as unique or novel contributions?

3. Given the elicitation devices offered – two photographs used for projected responses, four affectively charged scenarios to encourage conversational response and evaluation, and one conflict that participants were asked to resolve – which are most effective for value elicitation purposes? By effective we mean, first, which elicitation devices are most productive with regard to sheer volume of value responses? Second, which elicitation devices better serve the elicitation of some categories of value versus other categories?

4. METHODS

4.1 Materials

The above described elicitations were all conducted as paper and pencil tasks meant to gather participants' value-based thoughts and reflections. Participants were encouraged to write freely, to take their time, and to study their assigned photograph (where appropriate) or written passage carefully. They were asked to describe fully their thoughts and feelings whether writing a narrative in response to photos, responding to one of four pro- or anti- logging passages, or constructing a just, fair, or morally defensible resolution to the pine/cancer drug conflict scenario.

4.2 Coding

Several hundred pages of written responses were produced. Identifying the different invoked value expressions was understandably difficult. Psychologists and sociologists have developed value or attitudinal typologies based on specific belief statements; economists have worked carefully to distinguish between use and nonuse value, and between functional value and intrinsic value. But as the research goal also involved representation of ethical values, it was necessary to develop a coding scheme that spelled out more fully such value dimensions. Rolston's (1994) book, *Conserving Natural Value*, was therefore used as a basis for the coding scheme. Each chapter was culled for discrete types of value. Over 35 categories of value were generated, though some categories were eliminated due to overlap and due to nonmention by respondents. In the end, 25 categories of value remained pertinent. These are defined in Table 1. The first column states the value labels or categories, the second column contains brief definitions either quoting or paraphrasing Rolston (1994), the third column includes relevant page references to Rolston's text. The author takes full responsibility for these definitions and labels; they are summations of her reading of Rolston and should be understood as such. Any errors in translation or application are hers alone.

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Value Category	Definition	Pages
Ecological Sustainability	Valuing development that does not compromise ecosystem integrity.	85
Rights/Equity	Deliberations on the rights of nature including: a) basic idea that nature has rights, b) idea of balance between humans and natural rights, c) idea that rights of nature take priority over humans, d) idea that human rights take priority over nature.	106–13
Recreational	Nature as provisioners of a physical challenge (e.g., mountaineering), as a show to be watched (e.g., bird watching), as a place to build skills (e.g., scouting organisations).	135
Philosophical/ Spiritual/Religious	Nature as a philosophical and religious resource, as inspiration for religious/philosophical/spiritual thought and experience	140–1
Aesthetic	Beauty in life and landscape, admiring a rainbow/snow-capped mountain, etc.	136
Life Support	Earth as a biological habitat/home. Biosphere as a source of climate, water cycles, photosynthesis, etc.	7
Historical/ Evolutionary	Historical value of nature and landscapes as a record of past processes (geological formation of the earth) and as an evolving system.	76
Future Generations	Recognition of the rights of future generations to a healthy environment.	19–21
Population Sustainability	Concern about nature as it meets human needs. Concern for the equitable division of products of nature among Earth's citizens.	145–50
Economic	Commodity value of extracted natural resources.	134
Employment	Valuing resource-based jobs.	—
Biodiversity	Valuing the preservation of biodiversity expressed as variety of species (number of species present), and rarity of species.	34–37
Place Identification	Nationally recognised places: e.g., 'the prairies'.	8,9
Pharmacy	Valuing resources in nature that can cure human illness or have the potential to cure human illness.	—

TABLE 1. Value dimensions inspired by Rolston's *Conserving Natural Value* (continued overleaf)

Value Category	Definition	Pages
Wilderness	Valuing the existence of wilderness or wild places.	186–92
Intrinsic	Value inherent in nature in and of itself, not because it serves some human or biological or ecological need.	167
Community	Recognition of humans as members of the biotic community and/or valuing the idea of a biotic community	81
Complexity	Valuing the complexity and intricacy of material systems	181–4
Scientific/Intellectual/ Creative	Valuing nature as a basis for creative or intellectual thought.	135,195
Recovery	Valuing the ability of an ecosystem to heal itself, to recover from natural or anthropogenic devastation.	88–93
Existence	Valuing the simple possibility that a natural place is out there and in good shape though one may never see it.	—
Cultural Sustainability	Valuing the relationship between cultural and biological sustainability.	1–6
Cultural Symbolisation	Wildlife as cultural symbols – e.g. bald eagle for the US; the maple leaf for Canada.	137
Oppositional Forces	Valuing the struggle between destructive and life giving forces of nature.	139

TABLE 1. (cont.) Value dimensions inspired by Rolston's *Conserving Natural Value*

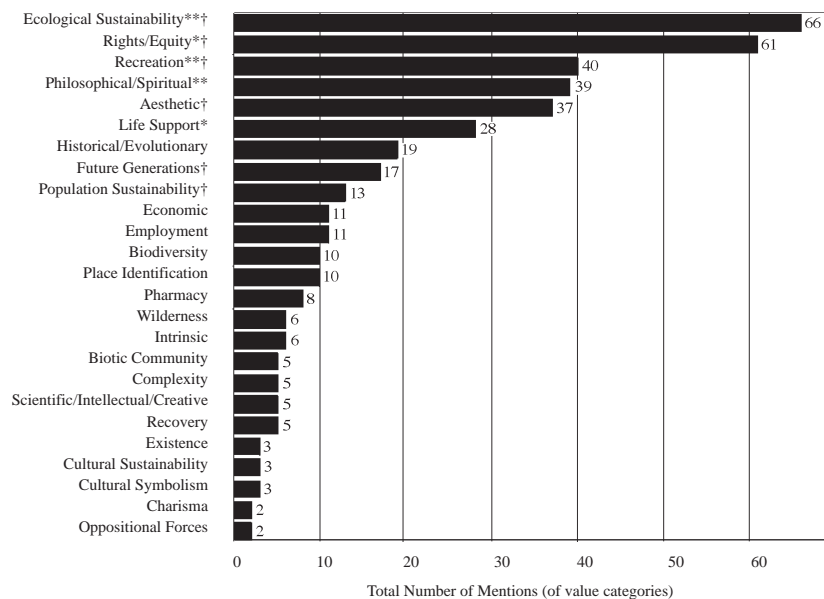
Coding consisted of matching participants' phrases to appropriate value categories. For instance, the phrase 'I appreciate the recuperative powers of nature' was coded as a recovery value. The author worked with a graduate student to ensure that two people coding the same responses would arrive at the same [value category] conclusions.⁵ We began by reviewing and discussing the meaning of the different value categories. Thereafter we coded a selection of responses together and discussed differences of opinion. We then each coded responses independently. Intercoder agreement across all responses was approximately 80%. The author was responsible for the assignment of value categories when disagreement occurred. If a respondent mentioned the same value more than once, the value was coded only once.

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5. CONTENT ANALYSIS

5.1 Value content

The rich, lengthy, and value-dense passages which characterised responses to these three tasks lend credence to the claim that under ‘naturalistic’ conditions (i.e. conditions that mimic ordinary talk and ardour), participants have a great deal to say about values. Consider the following passage taken from a participant’s response to task 3.4 (old-growth photograph). It is not an exceptional passage, and like many, it is unabashedly romantic (a discursive style ill-suited to most small group discussions). Nonetheless, it manages to convey meaning as defined by the forest’s capacity to invoke the ephemeralness of human life, to suggest that forests represent something larger, more enduring than the human self. ‘Jane hiked farther, finding herself beneath a canopy of old growth shade. She was amazed by the immense size of the trees which due to old age and climate were covered in moss. Staring out at the tree, she thought to herself, “It’s so old”. She thought further about her age in relation to the trees. It occurred to her that her life was a very small part of the life of the earth.’



* Categories in which at least half of total responses were generated by conflict scenario

** Categories in which at least half of total responses were generated by old growth TAT

† Categories in which value was invoked in at least 6 or 7 possible elicitation conditions

FIGURE 1. Ordering of value categories according to frequency of mention

Figure 1 depicts the ordering of value categories according to their frequency of mention across all elicitation tasks. Overall, 416 expressions of value emerged across the 25 different value categories. The top six of these categories (ecological sustainability; principles of equity and the rights of nature; philosophical or spiritual values; recreational values; aesthetic value and life support value) encompass the large majority (65.1%) of all responses.

5.1.1 Ecological sustainability.

The top category, ecological sustainability, refers not just to the sustainable maintenance over time of a resource but to the general principle of valuing development, acts, use, or impacts that do not compromise ecosystem health or integrity. The principle was invoked in all elicitation conditions but most (34 of 66) responses came from the ‘conflict scenario’ condition.⁶ The importance of ecosystem health was variously articulated. Some participants voiced a point-blank resistance to ecologically injurious practices: ‘I am indignant over people’s ecologically damaging ways.’ Or, ‘trees are not an everlasting resource. They take many years to grow to maturity and planting efforts are not sufficient.’ But much more often the priority of achieving ecological sustainability was expressed by a desire to compensate, and sometimes hyper-compensate, for any resource use in the hopes of achieving sustainability. ‘Trees must be taken strategically from areas where growth is a good possibility.’ ‘The ecosystem of a world or even a region needs to be upheld ... for each tree that [is] cut down, they must plant two in its place.’ ‘I would cut down a small portion of trees to be used for immediate care of patients. At the same time, I would plant mass quantities of new trees.’ Finally, ‘with each tree logged the cost of planting 10 trees should be charged’.

Also common were lengthy written passages offered by respondents on the possibility for tradeoffs, bargains, or the development of alternative practices and products: ‘I would mandate moderate research regarding the [pine-harvested] cure, so that the research does not infringe upon the forest’s sustainable growth.’ ‘Stop logging of the trees and start planting them to harvest as a crop. No doubt human life would be lost by not getting treatment to patients in immediate need, however destruction of the ecosystem, extinction of other species is not justifi[able].’ ‘Order selective cutting of say 15% of non old-growth ponderosas for medicine, while setting up nurseries to grow the trees as a crop for the future.’ ‘Limit the harvest of pine to an eighth to a half, depending on the pine left and accounting for any ecological damage. Start the growth of pine as a crop.’⁷ Further, many of the adjectives or modifying phrases employed throughout responses invoked either ecologically sustainable practices (‘limited’ extraction, ‘selective’ cutting, ‘minimal’ use, ‘log without damage’) or were critical of destructive and/or unnecessary use of resources: ‘careless consumption, ‘wreaks damage’, ‘earth destroying’, etc.

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It is not surprising that references to ecological sustainability are prevalent in the conflict task, in that many scholars have recognised and/or monitored widespread endorsement of the construct. The context for elicitation also pits ecological health against human health and in this sense the finding is also unremarkable. However, the conflict task instructions asked respondents to defend their recommendation for resolving the conflict by explaining why their *decisions* [were] *just, fair, or morally defensible*. That is, when explicitly asked for an ethical defence of their decision, eco-systemic health (commonly construed as a scientific principle) figures prominently. This is novel in that systemic health is operating as a moral construct (i.e., as a good or system that deserves health and therefore protection) rather than a scientific one.

5.1.2 Rights/equity.

Moral reasoning is also evident in participants' references to the rights of humans vis-à-vis nature. Historically, the concept of rights applied solely to human groups, as an expression of individual or group entitlement to treatment of a particular quality (e.g., fair or equal treatment). 'A right is a valid claim that a person can make to have his or her interests and welfare taken into account in the society in which he or she lives' (Rolston 1994: 106). Rights operate in civil society as phenomena that are traded, granted or violated; nature therefore cannot have rights because wildflowers cannot assert entitlement over clouds or birds. Environmental ethicists have argued, however, that rights should be extended to nature because animals suffer pain and should rightly be protected from inhumane suffering; because natural systems have a right to prosper as integrated, inter-dependent wholes; and because environmental goods have a right to subsist in the ecological matrix of which they are a part (Rolston 1994).

Philosophers' efforts to delineate the arguments for and against the rights of nature are ongoing. Technically speaking, a rights-based approach might require, following Rolston (1994), that nature be able to experience its interests as interrupted, intruded upon, etc. This may therefore defeat any plausible argument for nature's rights, especially as concerns nonsentient life forms. What is clear, however, is respondents' attention to the idea that nature has standing versus human populations and human needs. Anthropocentrism – the position that nature's worth is derived primarily from its capacity to serve human ends – is no longer a given. Instead, respondents repeatedly demonstrated an effort to demarcate nature's standing, a principle that comes closest to or can be glossed informally as being 'rights-based.' Participants thus actively distinguished themselves as persons who believed in: (a) the basic idea that nature has rights, (b) the necessity of achieving a balance between human and natural rights, (c) the belief that the rights of nature take priority over the rights of humans, or (d) the conviction that human rights take priority over nature's rights. Seven of 61 respondents recognised the *right of nature* to be free from anthropocentrically derived impacts. 'It angers me that man can cause [ecological] disaster by

inflicting their desires for tables and chairs [wood by-products] and as a result cause animals to be left homeless and susceptible to death.' Others noted simply the possibility of a rights-based agenda: 'He (the unidentified figure in the projective style photo) is now working with a company for land rights to see that the woods are not clear cut.'

Just over half the responses in this category invoked the moderate principle of achieving a balance between the rights of nature and humans. This was expressed as the need to compromise between human material needs and nature: 'I don't think humans are more important than trees. I think we all hold equal value.' Or, 'It is unfair to cut all of the trees down, and destroy the habitat of many animals. Cutting some and planning for the future seems to be just and fair.' Or, 'Loggers are often vilified for trying to make a living [i.e., they have rights], and the destruction of their human spirit is as important to me as the destruction of forests.' [This response was also coded as an expression of employment value.] On other occasions, respondents simply expressed their unease with a perceived lack of balance between the rights of humans and nature. For one participant, the sight of the clear-cut photograph 'added fuel to the uncomfortable knowledge that we live in a sometimes unjust world.' In the pine/cancer drug conflict, some participants resisted asserting the rights of humans or nature on the principle that every one (humans) and thing (nature) suffered if the rights of either emerged as dominant. 'If nature isn't treated fairly, we won't be treated fairly.'

These predominant pleas for equity and rights, 'balance', and 'compromise' were offset by a lesser number of respondents declaring the primacy of nature-centric rights. These were generally forceful and confident responses: 'I think cutting down trees is wrong, I believe that forests are more important than people.' 'It is not acceptable to sacrifice the environment which effects us all in order to possibly prolong a few lives.' Others ranked the rights of humans vis-à-vis nature by asserting, only, the rights of 'younger patients' and those with 'longer life expectancy', but otherwise asserted the rights of nature. Another equated 'rights' with the 'naturalness' (or not) or the life threat's source. An unnaturally derived threat was not tolerable, a natural one was. 'Diseases are terrible, but are not worth destroying a region [pine] in an attempt to cure some of the cases. People will die in this world, it is natural but killing other species to slow down the human death rate is not justifiable.'

Some (15 of 61) participants asserted the primacy of human-centric rights (i.e. the need for human rights to transcend those of nature). A few did so via theological justifications: 'I believe God put the trees and wildlife here for many reasons – to make our world look good, to [provide] a place for animals to live and eat, and for human survival. Humans are more important than a species of pine.' More typically, they invoked the right of humans to a life as an incommensurate or protected (above all else) value (see Baron and Spranca 1997). 'Human needs come first.' 'Humans are a first priority in all cases.' 'Humans must be good stewards ... the range [of the pine species in the conflict scenario] is

unimportant when human lives are at stake.’ And finally, ‘Human life is *always* [participant’s emphasis] more important than plant life.’

5.1.3 *Spiritual value.*

Nature as a source of inspiration for religious or spiritual thought is well-represented in participants’ articulations of value; their responses reflect Rolston’s claim that wilderness works on a traveller’s soul as much as it does his or her muscles (1994: 141). Responses within this category tended to be verbose and expansive in style and delivery, due partly to the preponderance of photo-inspired narrative responses and the fact that participants are describing states of being or experiences rather than benefits or rights. Responses also suggest at least six dimensions of religious or spiritual value: these characterise nature as sublime, as inducing other-worldly states (of either exaltation or serenity), as humbling, as a space for self-revelation and sacred practice, and as an animated life force.

The first construct, nature as sublime, is affiliated with romantic philosophy’s suggestion of ‘sublime landscapes as the rare places on earth where one ... [might] glimpse the face of God’ and, more recently, where one escaped the debilitating effects of an industrialised and urbanised civilisation (Cronon 1996: 73). In the words of respondents: ‘I come here to gain some perspective. It makes me realise that there is more to life than what I am constantly aware of in the city.’ ‘The majestic trees helped her escape from the city.’ ‘Trees provide the fresh air that industrialised states do not have. We want to enjoy our health to the fullest so that we can appreciate what God has created for us to enjoy.’

References to nature as a provider of other-worldly states include both ecstatic (a quasi-religious term associated with exalted or rapturous states) and serene experience. ‘There is something magical found in nature that can be found nowhere else, a high.’ The proposition that certain natural settings might induce other-worldly states is suggested also by participants’ frequent mention of feelings of awe (‘I felt awe and respect’, or, ‘she looked up at them (the trees) and felt their awesome presence’) and the experience of being humbled by nature.⁸

Humble suggests, literally, insignificance, an anti-arrogant posture that diminishes or de-emphasises the human self as a central organism in the biophysical world. Several responses begin with the term ‘humble’ and then go on to characterise such states as ‘spiritual-like’ and as mildly pleasurable. ‘[She feels] humble – she stands there absorbing the presence of the trees. Knowing the trees have stood there for hundreds of years she becomes aware of how small her role actually is in the perpetuation of life: That she is one small part of the big picture.’ For another, ‘Humble – she is utterly amazed at what she is looking at. She knows the tree must have a thousand years over her. The tree is her serenity. She realises that no matter what happens to her, no matter what she does, she is merely a speck, a grain.’ And finally, ‘standing in awe I gaze upon the fuzzy green giants. Their size and strength fills me with the feeling that I am the size of a tiny ant.’ Not all references to awe, however, are accompanied by a

diminution of the self or of egocentrism generally. Instead, some participants equate nature-inspired awe with a capacity for self-revelatory ruminations. Nature, that is, is valued for inculcating self-knowledge: 'Awe – the forest is a place where I find and see so much of myself it is scary.' Others value nature as instructive of human behaviour. Thus a participant ponders a tree's imagined patience and recommends the virtue in her own life as a means for overcoming difficult familial circumstances: 'Maybe, all she had to be was as patient as a tree and, eventually, she could adapt to her new (post-divorce) family environment.'

Theological references also prevail; some specify 'God' or divine forces while others invoke nature as a place for spiritual practice or as a sanctuary which taken literally means 'a sacred or holy place' (Yerkes p.1265) but is also used colloquially by many to connote a place of refuge. 'Gazing at the splendour of the ancient trees, she at once appreciated the intricacy of God's creations. She now knows that the earth and God share many qualities.' 'She is in awe of God's creatures. She is a strong Catholic, and appreciates God's creation.' 'Upon arriving, he envisioned [the place] a misty and magical spot to meditate.' And, finally, 'these are the trees I climbed [referring the absent or burned trees in the clear cut photo], how powerful and mighty were their branches. They could never let me down, always cradling, protecting [i.e., a sanctuary or refuge].'

Lastly, a more radical valuing of nature's spiritual qualities is suggested by respondents who animate the natural world. This is often achieved by respondents' drawing of attention to qualities a good (e.g. a tree or forest) is seen as projecting toward the [human] perceiver. Thus, when a respondent states a discontent with those who regard trees as market goods, he claims: 'I do not understand the people who see money in such things [forests] rather than their vibrating aliveness.' Other participants suggest an inter-species, inter-sensory conversation (following Abram 1996) when claiming to *hear* and respond to natural goods: 'The man leaned his head forward, listening to the vast nothingness, and heard a plaintive cry from the lush greenery a few hundred yards from where he was standing.' From another participant: 'The trees began to call, enchanted she came at will.'

5.1.4. *Aesthetic value.*

Aesthetic value emerges as an important dimension of value, a finding that has been replicated in contingent valuation contexts (Constanza et al. 1998). Respondents remain, however, relatively inarticulate on this subject. We can be confident that respondents are valuing nature for its aesthetic qualities given many references to 'beauty'. 'Never had she imagined such beauty.' 'I will never overlook the beauty of this planet.' Or, 'The beauty of natural process delights me.' Some respondents suggest too that age and beauty are linked given recurrent mention of beauty as a product of age: 'It's taken hundreds of years to get this beautiful.' Beyond these basic features, participants offered few clues as to how they might characterise aestheticism in nature (brief references to smell

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and colour aside). Participants may have a limited aesthetic vocabulary; alternatively the value elicitation opportunities provided by these tasks may have been ill-suited to descriptive or aesthetically rich responses. A further problem might be the fine or permeable line that distinguishes aesthetic from other categories of value. Rolston (1998), in an essay entitled 'Aesthetic Experience in Forests', refers to sacred and sublime experiences in nature that also fall under the category of 'spiritual value'.

5.1.5 *Recreational value.*

Recreational value is typically construed as a 'use' value and includes nature as gymnasium (the provisioner of physical challenges such as hiking or mountaineering), as theatre (nature as a show to be watched, e.g. the eco-tourist's bird or whale watching), as a means for re-creating or invigorating oneself through relaxation ('walking back to her car, she realised how serene ... nature was, and it calmed her'), or as a provisioner of character-building exercises including the learning of survival or coping skills such as those practised by guiding, scouting or Outward Bound programs (see Rolston 1994: 122, 135). Participants' value invocations that fall under this category are relatively commonplace, including multiple references to hiking, camping, and a general pleasure taken in outdoor pastimes. References to favourite places for recreation, finding diversion from life routines, amusement and relaxation were also common.

5.1.6 *Life Support value.*

Life support value is the last of the top six invoked value categories. Mentions of life support value resemble closely what economists often refer to as natural capital, and what ecologists label ecosystem services. Constanza et al. (1998) have collaborated to provide a global assessment of natural capital; the product is an exemplary and comprehensive estimate of the economic value of 17 ecosystem services (services such as climate regulation, nutrient cycling, gas regulation such as CO₂/O₂ balance, or water supply and regulation). Lay evaluations are understandably less sophisticated regarding the range of ecosystem services. Nonetheless, recognition that the earth has value as a biological habitat or home is widespread, as is recognition of human and nonhuman dependency on food chains, photosynthesis, air quality, or the decomposition and recomposition of organic matter. In the words of participants: 'No one denies that [the wood by-products of] trees provide us with shelter, but we can't lose sight of the other things they provide us: air, wildlife and a future for the natural cycle of things – without those, where would we be?' Or, 'I don't understand how people keep destroying the earth in the name of progress. Don't they realise that when the earth dies, they will die with it?' For other participants, deforestation is closely associated with anthropogenic sources of the greenhouse gas, CO₂ (as opposed to the much greater contribution from the burning of fossil fuels). Also notable in this context is the fact that participants clearly think systemically and identify the disvalue of acts that threaten system services. 'People have known,

for quite a long time, that stripping the planet of trees leads to an increase in average global temperature, violent storms, rising sea levels, and in general a less healthy place for people to develop human society.'

5.1.7 Additional value expressions.

References to value also include mention of the right of future generations to a healthy environment and mention of economic and employment value. Notably, economic value (i.e., support for the importance of using natural capital for economic or market health) and employment value (the importance of resource-based employment such as timber jobs) ranked 10th and 11th given 25 possible categories; together they account for approximately 5% of responses, whereas the top two categories account for just over 30% of responses.⁹ Some of the employment- and economic-centric responses also indicated deep ambivalence about the tradeoffs inherent in their consideration of economic and ecological priorities. A salient example follows: 'It is so difficult to tell lumberjacks, who are trying to support a family, that they don't or shouldn't have a job. I'm highly against clear-cutting but I want to find job alternatives for the lumberjacks.' From another participant: 'I am very split on this whole debate – I value trees and oxygen and ecosystems, yet I know that human beings need plant products.'

Less common though intriguing value references include:

- Positive valuations of the historical and temporal evolution of biotic life ('This tree has been around for thousands of years.' Or, 'Standing and looking at the land laid out before me I feel a great sense of loss for our world. It takes such a long time for a forest to grow.')
- Recovery value ('I appreciate the recuperative powers of nature.')
- Complexity value, that is valuing a physical place for the intricate processes and systems that are within it ('She takes notice of the symbiotic relationships she sees around her, the moss and the tree body ... an example of the ideal interactions which occur between organisms.')
- Intellectual and scientific value, rather positive valuations of natural phenomena as the basis (via reflection and study) for human intelligence and creativity.

Finally, some responses are notable for their interweaving of values, to wit, for the contributions of biotic health to psychological and cultural health, or for the sheer force of imagination apparent in some responses: 'Massive barked, moss-covered, ancient soldiers that protected the gates to the true muse of nature, loves poetry.' Together, these rich expressions attest to the potential scope of public thinking about value and suggest that environmental values remain an expansive yet relatively untapped terrain.

5.2 Task efficacy

Table 2 shows the number of participants who expressed a particular value under each of the elicitation conditions. Overall, the average participant expressed values in 2.38 different value categories. The Pine-Cancer Drug Conflict task was especially notable. It evoked a low number of value categories per person (1.98). Despite having the largest number of participants (48), this task evoked the fewest value categories (9) over all participants, with 72% of all values falling into two categories, Ecological Sustainability and Rights/Equity (without this task, these two categories would have ranked fourth and fifth across the other six tasks, rather than first and second).

The four Pro-logging and Anti-logging narrative showed no systematic effect due to either the pro/anti variable or the Strong vs. Subtle variable. The most effective of all seven tasks was the Subtle Affect Anti-logging narrative, with 3.20 values per subject and 19 value categories used across all subjects, despite the small number of subjects (15).

The two TAT-like image-based tasks were both effective in number of value categories evoked across participants (18) but they showed very different patterns of values; for example, in the Clear-cut TAT, 13 participants were coded as mentioning Ecological Sustainability whereas in the Old Growth TAT, only one participant mentioned that value. Similarly, in the Clear-cut condition only 3 participants mentioned historical value; whereas 13 participants in the Old-growth condition mentioned historical value. In addition, the Old-growth TAT showed a significantly higher average number of responses per person (3.16 vs. 2.06 $p < .05$).

The most striking pattern suggested by these results is the impact on value expression of more versus less controversial stimuli. Non-controversial stimuli are efficacious in eliciting more, and more varied, values than are controversial stimuli. The most prolific producer of values was the Subtle Affect Pro-logging narrative. This narrative offers an affectively subtle and morally thoughtful presentation of an opinion about logging that is shared by the vast majority of the public (e.g. Wagner, Flynn and Gregory 1998) and that is commonly accepted on the campus from which these participants were drawn. The second most prolific condition was the visually pleasing Old-growth photograph.

Controversial stimuli did not produce a comparable number and variety of values. The least prolific producers of value were all controversial conditions. These included the Pine/Cancer Drug scenario, which presented an explicit conflict, the Clear-cut picture which likely evoked the clear-cut controversy that has been raging in Oregon for many years, and the Subtle-affect Pro-logging scenario (also a controversial position). However, it is important to note that the controversial stimuli were clearly conducive to discussion about the rights of nature and the importance (including ethical importance) of ecological sustainability. The concept is well represented in each of the controversial

	Total from All Elicitation Tasks	Strong Affect Pro-logging (n=14)	Subtle Affect Pro-logging (n=16)	Strong Affect Anti-logging (n=15)	Subtle Affect Anti-logging (n=15)	Pine/Cancer Drug Conflict (n=48)	Clear-cut TAT (n=35)	Old Growth TAT (n=32)
Ecological Sustainability	66	6	6	3	3	34	13	1
Rights/ Equity	61	7	7	5	1	34	6	1
Recreation	40	1	1	1	3	0	9	25
Philosophical/Spiritual	39	0	1	3	3	0	7	25
Aesthetic	37	3	1	4	7	0	7	15
Life Support	28	6	1	3	4	7	6	1
Historical/Evolutionary	19	0	0	0	3	0	3	13
Future Generations	17	3	1	1	2	6	3	1
Population Sustainability	13	3	2	3	1	2	2	0
Economic	11	0	3	3	4	0	1	0
Employment	11	0	5	3	3	0	0	0
Biodiversity	10	0	0	0	1	4	4	1
Place Identification	10	2	0	0	6	0	2	0
Pharmacy	8	0	0	0	0	6	0	2
Wilderness	6	1	0	1	2	1	0	1
Intrinsic	6	1	1	2	1	0	1	0
Community	5	1	0	0	1	0	0	3
Complexity	5	1	0	0	0	0	1	3
Scientific/Intellectual /Creative	5	0	0	0	1	0	1	3
Recovery	5	1	0	0	0	1	2	1
Existence	3	0	0	1	1	0	0	1
Cultural Sustainability	3	0	2	0	0	0	0	1
Cultural Symbolism	3	0	0	0	1	0	0	2
Charisma	2	0	0	0	0	0	2	0
Oppositional Forces	2	0	0	0	0	0	2	0
Total number of value responses	416	36	31	33	48	95	72	101
Average number of value mentions per subject	2.38	2.57	1.94*	2.20	3.20*	1.98*	2.06*	3.16*

TABLE 2. Response per task Breakdown

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conditions. Rights, for instance, were mentioned at least 6 times and as many as 34 times under these conditions, whereas only one participant mentioned rights under each of the two noncontroversial conditions noted above.

6. DISCUSSION

The previous content analysis of value responses demonstrates that participants are surprisingly articulate about a wide variety of noncost and nonutilitarian values when value elicitation exercises encompass rather than avoid affective, imagistic, storied or morally-meaningful content. Under the elicitation conditions provided, participants spoke freely of ecological sustainability as an ethical and not only scientific principle, offered varied expressions of the rights of nature, and provided a multifaceted characterisation of spiritual value. Comparatively few responses were permeated by economic or utilitarian concerns, despite reference to timber employment in the Pro-logging and Anti-logging scenarios. Detailed expressions of aesthetic value eluded most participants despite many participants' references to beauty. Yet, respondents recognised the historic qualities of forests, recognised forests' recuperative powers in the face of impacts (recovery value), and frequently invoked the right of future generations to an ecologically healthy world.

Tasks that neither directly nor indirectly refer to conflict appear to encourage more frequent and more varied references to value. Controversial tasks appear to limit the frequency of value references but do encourage participants to be lay philosophers, to discuss rights, and to defend ecological sustainability.

Several explanations may be tentatively proposed for the elicitation tasks' ability to encourage discussion of a broad variety of noncost and nonutilitarian values. A first plausible explanation is that allowing for ordinary, storied talk of values during elicitation created a comfort zone or imaginative cognitive environment which in turn encouraged expansive thinking about value. A second plausible explanation, noted above in Section 3.3, is that values are affiliated with symbols. Natural phenomena, concretely imagined through image stimuli, suggest ('symbolise') different meaning to different people; values are stored in symbols to the extent that such symbols sum up or resonate with personally and socially important qualities (Geertz 1973: 127). A third

* Note significant difference between average number of value categories mentioned per participant, per scenario.

Old Growth and Clear-cut, $p < .05$

Old Growth and Conflict, $p < .05$

Old Growth and Subtle Affect Pro-logging, $p < .05$

Subtle Affect Anti-logging and Pine/Cancer Drug Conflict, $p < .05$

possibility is that while some dimensions of value focus on material worth or contributions to systemic health, other dimensions are closely related to states or what is sometimes called experience – states of mind, bodily states and other sensory events. This distinction is akin to the distinction in behavioural decision theory between decision utility (the utility derived from assigned weights or money estimates at the time of the decision) and experienced utility (defined by the quality and intensity of the hedonic experience associated with the outcome of the decision) (Kahneman and Snell 1990: 187-88). One might value a forest for its timber, its board-feet productivity, but one might also value a forest because, as many participants noted, a forest provides the (quasi-spiritual) experience of ‘awe’ or, as other participants noted, offers the chance for an inter-sensory exchange (the experience of hearing the sounds of trees in the wind) between the biophysical world and the human ego or self. Narratives often focus on personal experience and may therefore be particularly suited to the elicitation of value-states or experienced utility. Fourth, it is possible that some values should not be affectively neutralised. To do so may cleanse value elicitation contexts of meaning, although caution regarding the type of affective content is essential (e.g., controversial vs. noncontroversial, affectively powerful vs. affectively subtle). Conventional elicitation tasks may be met with resistance or indifference precisely because a participant is expected to de-animate – take the literal and symbolic life out of – his or her self and the good in question, via the act of converting personal zeal for forests into a cash metric or agreement with a survey question about a forest’s merits. Lockwood (1999) similarly notes that many elicitation instruments fail to ‘give participants any opportunity to explore different ways of expressing their values’. In the absence of alternatives, participants ‘must offer a response that is against their preferred mode of value expression [which may explain in CV contexts] unreasonably high willingness to pay values and protest zeros’ (p. 394).

While the above research outcomes are descriptively worthy and do lend credence to the possibility that some rethinking of elicitation contexts is warranted, these particular elicitation tasks should be tested on a broader group of participants. These elicitations are also limited by their descriptive but not analytic qualities and by their use of excessively controversial stimuli. Speaking first to controversial stimuli, ethicists have appropriately argued that ideas about the rights of nature are generally excluded from discussions about environmental values. Proper use of controversy may open the door to more elaborated discussions of rights. However, if the essential point is the [participant’s] ability to think expansively and elaborately about value, then noncontroversial imagistic and narrated stimuli appear to be more promising.

Speaking to the second point, because narrative or imagistic stimuli are descriptive not analytic phenomena, only descriptive outputs are generated. Value literacy may refer to participant capacity to verbalise multiple dimensions

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of value but literacy should also include some understanding of what verbal descriptions mean at the level of specific policy options. These task outcomes will not help a policy analyst understand, for example, what spiritual value means in the context of a land management plan. Does it mean the introduction or development of natural sanctuaries or the designation of some territory as sacred? Further, once dimensions of value are better described or characterised, the policy analyst needs still to know how such values play out or are traded off against other concerns. These problems suggest that some synthesis of conventional and unconventional (e.g. as described herein) elicitation practices is beneficial. Specifically, how might some of the benefits of imagistic, narrative or scene-specific elicitations be transferred to more structured and invariably more quantitative elicitation contexts?

One option is to explore more fully imaginative and indirect elicitation tools when working in small group contexts where the goal is to place participant concerns on the table and to examine such concerns in a decision context. That is, to acknowledge that some categories of value or types of expression may be extremely important but remain concealed by formal discussions and direct question-answer formats that silence some values as too odd (irrational, ethereal) for discussion.

A second option is to elicit judgments or construct surveys using 'ordinary talk' or narrative passages instead of conventional belief statements. Shanahan and colleagues (Shanahan, Pelstring and McComas 1999) have examined this possibility; they compared survey items drawn from Riley Dunlap's (Dunlap and VanLiere 1978) New Environmental Paradigm (NEP) to respondents' evaluations of story outcomes. The authors affirm an abiding respect for surveys, but also find that narratives are a 'distinct communication context that may provoke different thoughts and feelings than simple belief statements' and that 'narrative measures can tap into different constructs [as compared to] typical attitude measurements' (p. 412, 416).

A third possibility is to utilise more fully descriptive scenes or narratives that have embedded in them relevant ethical, social, ecological, or economic information (Satterfield, Slovic and Gregory 2000). An information-processing perspective suggests that narrative presentations of judgment or value-elicitation contexts (including the use of concrete descriptions and images) help participants to better integrate multiple categories of value and help participants to remain sensitised and attentive to changes in [value] attribute levels across different policies.

A final possibility is to examine more fully the assumption that pre-elicitation factual information is a neutral 'just the facts' preparatory course and nothing more. It may be that fact sheets meant to 'inform' participants and otherwise rid elicitations of any additional qualities (images, subtle emotion, narration) have unintended implications for some expressions of value. It may be that the

language used to introduce or present value elicitation contexts influences which values are most influential in the decision outcome. It is a testable hypothesis that utilitarian or cost-benefit language unintentionally accentuates the influence of economic or technical value considerations (e.g. cost or scientific variables) whereas narrative passages may accentuate experiential or affectively-tinged value dimensions (e.g. those consistent with ethical or spiritual values).

Ultimately, value elicitation practitioners should be more ambitious about developing tools which fully accommodate the myriad expressions of value (from the economic to the deeply ethical) and employ user-friendly and emotionally and morally meaningful (though not necessarily controversial) contexts to help participants think carefully, reflectively, and imaginatively about value.

NOTES

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² Prominent exceptions to the claim that values researchers avoid the implications of moral convictions can be found in the work of Baron and Spranca (1997) and Ritov and Baron (1999), who attempt to delineate the morally-derived limits people place on trading-off their most protected values.

³ Again, Kempton et al. (1995) offer an exception to the rule. They used interactive open-ended interviewing when conducting research. This method avoids some, though perhaps not all, of the problems discussed herein.

⁴ The tasks were based on writing solicited for this purpose by author John Daniel (1994).

⁵ The author would like to thank Lisa Bhopalsingh for her careful and thoughtful coding work.

⁶ That condition asked participants to settle a conflict between cancer patients and environmentalists and is described above in Section 3.3.

⁷ New quotation marks here and throughout this section indicate a new respondent.

⁸ Awe can also operate as an aesthetic term but the central flavour of these responses seem to follow most closely experiences social scientists define as quasi-spiritual. See for instance Milton (1999: 441).

⁹ This comparatively small representation of economic and employment value may be influenced by the university-based participant pool; most are young with minimal life experience. Many, however, mentioned their rural backgrounds ('logging country') in their narrative responses. The pro-logging and anti-logging affect scenarios actively encouraged deliberation on the competition between timber employment and industry problems and resource conservation.

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