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# Realms of Value: Conflicting Natural Resource Values and Incommensurability

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## ABSTRACT

Divergent values are often at the heart of natural resource conflict. Using discord over the Grand Staircase-Escalante National Monument in southern Utah, U.S.A. as a case study, I propose that values are perceived as incommensurate because they reflect different realms, with which there exist distinct concepts of what it means to value and distinct, irreducible forms of value expression. I further argue that collaborative, discursive processes are one way to account for plural values in policy and decision making without requiring a common metric, yet they are not without theoretical and practical challenges.

## KEY WORDS

Value conflict, incommensurability, plural values, Grand Staircase-Escalante National Monument, wilderness, collaborative decision making

## 1. INTRODUCTION

Moral, social, cultural and ecological values are necessarily part of environmental policy and decision making, but their articulation and the magnitude of their influence are rarely explicit. Much of the work that addresses this problem has presented, critiqued and refined discursive, deliberative models for decision making as a way to account for multiple values.<sup>1</sup>

Policy actions and the values upon which they are based may be compared and ranked ordinally in accordance with the extent to which they fulfil a certain criterion or set of criteria such as pareto optimality, preservation of ecological

integrity or moral goodness. Natural resource policy makers routinely make these comparative judgments, at times explicitly, yet often implicitly. However, while necessarily comparable in practical policy making, environmental values take many forms and cannot all be translated into a common cardinal metric.<sup>2</sup> While significant in debates over natural resource valuation and decision making, to date little work has been done to analyse how and why different values related to the environment are perceived to be incommensurable.

This paper presents a framework for analysing plural values that deepens our understanding of incommensurability and assesses the capacity of deliberative processes to account for these values in decision making. In Section 2 I distinguish between incomparability and incommensurability highlighting the importance of seeing these issues in the context of plural values and multiple decision criteria. In Section 3 I place value incommensurability and value conflict in the practical context of environmental policy and decision making and briefly list ways in which values can conflict. Section 4 uses examples from a case study in southern Utah, USA to illustrate how and why values are perceived to be incommensurable. I argue that ways of valuing can be categorised into realms and that within each realm value is conceived of, expressed and reproduced in distinct ways. The final section notes the strengths and weaknesses of discursive processes in accounting for plural, incommensurable values.

In the discussion that follows, when I speak of environmental values, I mean those values ascribed or related to humans' use of, interaction with and/or relationship to natural resources or non-human nature. I do not mean eco- or bio-centric values per se, nor necessarily those values typically held by environmentalists that require respect, care or moral consideration for nature. Furthermore, I view values as the result of a human valuing process that occurs in cultural, social and historical contexts. I do not analyse values as objective properties that inhere in resources or nature. Thus, how different individuals and groups come to hold their values, how those values are expressed, and the factors that influence a change in values, e.g. the origin, expression, and evolution of values, are significant for policy making.

## 1. INCOMPARABILITY AND INCOMMENSURABILITY

Value incommensurability is a fundamental problem in environmental/natural resource policy and decision making and has been leveraged in criticism of economic tools such as cost-benefit analysis and contingent valuation.<sup>3</sup> The incommensurability of environmental values is typically described as a tension between economic valuation methodologies on one hand and intrinsic, moral or civic values on the other.<sup>4</sup> This paper shows that there are many additional realms of value, such as cultural and scientific, that are also relevant to natural resource decision making. The problem can be framed in general terms as fol-

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lows: economic valuation views amenities or goods as substitutable, commodifies nature, and measures value in terms of willingness to pay. In contrast, moral, cultural and ecological values cast value and the process of valuation very differently, describing them respectively in terms of obligations to nature and future generations, cultural and personal identity, and ecosystem integrity.

It is important to note the distinction between incommensurability and incomparability. I use the definitions and distinction presented by Chang (1997b) and interpreted by Aldred (2002). Entities are incommensurable when they cannot be accurately measured along some common cardinal scale using a single metric unit of value. In contrast, entities are incomparable if no positive value relation holds between them, that is they cannot be ranked on an ordinal scale according to an evaluative criterion, which Chang calls a 'covering value' (Chang 1997b: 4). Comparability is thus a necessary but not sufficient condition for commensurability (Aldred 2002: 29). Chang dismisses incommensurability per se as relatively insignificant, compared to the larger philosophical problem of incomparability. Indeed, most of the authors in her seminal volume take incommensurability and incomparability as one in the same (Chang 1997a).

If we grant that decision alternatives can be ordinally ranked according to a given criterion or 'covering value' (i.e. they are comparable), then why is incommensurability important? Values, as they are expressed in the economic realm carry considerable weight and political power and often (although not always) stand as either the de facto or de jure decision criterion in environmental policy and decision making (such as cost-benefit analysis). Within the economic realm, values are most commonly expressed on a cardinal, monetary scale of measure. If, as I will show, other realms of value exist, that cannot be fully expressed in the cardinal scale of economic value, they are all too easily omitted from the decision process and, most significant in our current discussion, overlooked as legitimate alternatives for selection as decision criteria.

Thus, when applying value theory to real-world situations, it is not enough to simply confirm comparability. To make reasonable policy decisions, we must also establish a justifiable basis upon or framework within which the comparisons will be made. In environmental decisions, the contrast between commensurability and comparability must be analysed in the context of plural values and the necessity for simultaneous, multiple evaluative criteria.<sup>5</sup> The selection of a decision criterion or set of criteria (as in the case of multicriteria analysis), is thus critical in determining the outcome of a decision. A change in these criteria will yield a different decision outcome and thus have different consequences for the people and resources involved. An important problem in environmental decision making is, therefore, on what grounds can or do we justify selection of one set of decision criteria over another.<sup>6</sup>

The typology of values that follows does more than simply explicate the diversity of values that must be accounted for in natural resource decision making and the categories of possible decision criteria. I will show how different

realms of value are grounded in contrasting concepts of what it means to value and irreducible forms of value expression. In addition to concern over cardinal and ordinal measures and single and multiple decision-criteria, decision makers must also confront multiple definitions of what it means to value and multiple forms of value expression.

## 2. VALUE CONFLICTS IN NATURAL RESOURCE DECISION MAKING

Value conflicts exist when a resource, natural area, or element of non-human nature is simultaneously valued in multiple ways, the consideration of which implies mutually exclusive action or policy. Note the distinction between conflicts of interest and conflicts of value. Consider the case in which we must choose between saving the life of a pregnant adult female member of an endangered species or saving her fetus. What is in the best interest of one is counter to the best interest of the other, yet the same value, e.g. that of biodiversity, is at stake. However, as outlined below, most cases of practical natural resource conflict engage multiple values as well as multiple interests.

While logically distinct, examples abound of natural resource value conflict occurring in conjunction with incommensurability. To illustrate my argument I use conflict over designation and management of the Grand Staircase-Escalante National Monument (hereafter GSENM or simply 'the monument'), in southern Utah in the American Southwest (shown in Map 1).

GSENM was designated by President Bill Clinton in 1996 with the explicit purpose of preserving unique geologic, paleontologic, ecological, and archeological features. While GSENM designation was applauded by environmental preservationists as an initial step in protecting a unique desert landscape, many local residents and state government officials continue to hotly protest this reservation of federal land.

Conflict over GSENM designation and management centers, in part, around divergent perceptions of rights or entitlements (O'Neill and Spash 2000). Opponents to GSENM resent the assertion of federal control over regional resources. Local monument adversaries argue that local economic development depends on the mining of approximately 11 billion tons of low-sulfur coal located beneath the monument's surface in the Kaiparowits Plateau, now stymied by monument designation. Under a law known as Revised Statute 2477, they argue that historical use of the roads for resource use grants them continued legal motorised access to remote areas that are restricted under the GSENM management plan.

Many of the residents in the towns surrounding GSENM trace their heritage back four or more generations to Mormon pioneers, the first white people to create permanent settlements in Utah in the mid-nineteenth century who came in search of a theocratic homeland where they would be free from religious persecution. While rarely explicit in contemporary political battles, the values

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and priorities of contemporary Mormons in southern Utah are influenced by historical animosity between Mormons in Utah and the United States' federal government and the virtues of agriculture and resource use expressed in early Mormon doctrine.<sup>7</sup>

Meanwhile the Paiute Indians, whose ancestors traditionally lived in the region now within GSENM boundaries and relied on the springs, wildlife, plants and minerals for their physical and cultural sustenance, want to continue to have access to these resources as well as a significant role in the resource management decision making.<sup>8</sup> In addition, the GSENM case is part of a much larger, long-standing political conflict in Utah over wilderness protection state-wide.<sup>9</sup>

This case illustrates a conflict common in the American West as it engages three contrasting perspectives: a) moral, ecological, scientific and non-motorised recreational values that promote wilderness protection,<sup>10</sup> b) historical land use patterns that invoke attitudes of resource use, endorsing resource extraction for rural economic development, and c) cultural values of traditional resource use by American Indians.<sup>11</sup>



MAP 1. The Grand Staircase-Escalante National Monument lies on the Colorado Plateau in close proximity to the Grand Canyon, Zion, Bryce and Capitol Reef National Parks.

Similar sets of conflicting values can be identified in debates over drilling for oil in the Arctic National Wildlife Refuge, in which the ecological, cultural and moral values of intact coastal plain must be weighed against the jobs and economic revenues to oil companies, construction contractors, and the state of Alaska. Large-scale hydro-electric projects such as the Chinese Three Gorges and the Canadian Hydro-Quebec James Bay also exemplify tensions between economic, social, cultural and ecological values. In these cases, the cultural and social values of displaced villagers and the ecological values of free flowing rivers and intact watersheds must be compared to the value of electric power generation to boost technological and economic development.

In practice individuals and policy makers commonly make decisions involving choices or weightings between different forms of value. As Carson et al. (1994) note for example, while an extensive contingent valuation study was conducted to compare the values of mining versus preservation in the Kakadu Conservation Zone, decision makers based their land management decision on 'aboriginal concerns' rather than cost-benefit analysis (p. 747). The challenge for both theory and practice and the reason that plural values and claims of value incommensurability deserve attention is that existing decision-making institutions are not well suited for dealing with plural values and multiple decision criteria (Martinez-Alier, Munda et al. 1999; O'Neill 1997a).

Values can conflict in several ways. In the interest of space, I outline some of these modes of value conflict only briefly here. Illustrating how complex value conflicts can be on-the-ground, this short outline indicates directions for fruitful future work that might link philosophical value analysis with practical conflict resolution.

First, the varied realms of value engaged in a policy decision may conflict with the decision criterion, which may be either explicitly or implicitly stated. For example, when maximising economic efficiency entails resource development, this may, but does not necessarily, conflict with aesthetic, ecosystem, or social values. In the GSENM case for example, developing the Kaiparowits coalfield may degrade the scenic landscape, contaminate the ground water, or add dangerous and noisy truck traffic to the city streets of Kanab.

Second, values within the same realm may differ in content. Even within the same realm, or category, values held by different stakeholders may imply mutually exclusive decision outcomes. For example, two groups of stakeholders may place high recreation value on a particular canyon, one favouring motorised recreation, the other non-motorised recreation.

Third, while the disciplines of economics and ethics commonly perceive values as having an individual locus, values exist and are expressed and reproduced on collective and institutional levels as well and can therefore conflict across different loci (O'Neill and Spash 2000). For example, as an expression of shifting *institutional* values within the Department of Interior in the mid-1990s national grazing reform shifted from emphasis on economic value toward

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management for ecosystem value. This policy shift incited local, individual outrage over possible reductions in the number of animals permitted to graze on federal land. When *individual* ranchers join the local professional organisation, the Southern Utah Grazing Alliance, *collective* values expressed by and reproduced in this organisation are also engaged. These individual, collective and institutional values are comprised of several different value realms, including cultural, economic, historical and moral. Thus, distinct from value realms, values can conflict across individual, collective and institutional loci.

Finally, values exist and can conflict within nested geographic domains including local, regional, state, national and global. In the GSENM case, for example, arguments for and against wilderness preservation can be observed on local, regional and national scales. Concerned primarily with access to specific canyons, plateaus and river beds, local monument opponents perceive the conflict in the *local domain*. Yet, as illustrated in the mission statement of the Southern Utah Wilderness Alliance,<sup>12</sup> the values for wildlife habitat protection and ecosystem diversity expressed by Utah's dominant wilderness preservation organisation are *regional* in scope, encompassing the entire Colorado Plateau, a physiographic region that covers western Colorado, northern Arizona, southern Utah and northwestern New Mexico. Furthermore, national heritage, ecosystem and recreation values associated with the nation-wide wilderness preservation system or national parks system exist on a *national scale* and are closely linked with national identity and heritage (Nash 1982). Thus, in addition to the many realms of value detailed below, values can also conflict in content, between individual, collective and institutional loci and across nested scales, from local to regional, national and in some cases global.

### 3. REALMS OF VALUE

As members of cultures and societies humans value in multiple and complex ways.<sup>13</sup> I call the many ways in which people value 'realms'.<sup>14</sup> Distinct from the content of values themselves, realms of value are categories or a classification of ways in which the environment or natural resources are valued. What makes this classification potent in terms of plural values and incommensurability is that constitutive within each realm of value is a corresponding notion or concept of the value process, or to put it another way, what it means to value something.

Thus, for example, as outlined in Table 1, to value a canyon aesthetically is to recognise its beauty. To value a canyon economically is to assess a marketable commodity contained therein, coal for example, or to estimate the potential to trade the experience or preservation of that canyon on the market, even if only hypothetically as in contingent valuation. To value the canyon historically is to commemorate a significant event that occurred there, as for example a heroic river crossing.<sup>15</sup> To value the canyon for recreation is to consider the location



exceptional in terms of opportunity for hiking, boating, camping or off-road vehicle use. The same canyon may have spiritual or religious value as a significant location in religious history, (i.e. as a cultural birthplace for a tribe of American Indians),<sup>16</sup> or as a significant location, the visitation or contemplation of which is regarded as a pathway to enlightenment or redemption. The canyon may have scientific value as the location of unique fossil record, endemic plant species or well preserved archaeological ruins. It is neither inconsistent nor irrational for one single location to be simultaneously valued by one individual or a group of diverse stakeholders in many different ways. These diverse ways of valuing can be categorised as realms of value and each realm has a distinct corresponding concept of what it means to value and set of characteristics or traits that constitute greater or lesser value.

Linked with each discrete notion or concept of what it means to value something, there exists a corresponding irreducible form of value expression. For example, the aesthetic value of the canyon may be expressed in painting, photograph or poetry. The economic value of the canyon is expressed in terms of market price or willingness to pay. Commemorative designations, by an entity such as the City Council or the State Historical Society, formally express and acknowledge historical value. The recreational value of the canyon can be expressed in number of trips taken, time spent engaged in the activity, or described in qualities of the canyon such as scenery, opportunity for solitude, wildlife, geologic features, or archaeological ruins that contribute to a quality recreational experience. The spiritual or religious values of the canyon are expressed through ritual or prayer. The scientific value of the canyon might be expressed through research conducted and published or, as in the designation of GSENM, by formal legal protection.

Within any given realm, some expressions of value can be quantified and measured along a common cardinal scale and are therefore commensurable. Values in the economic realm are the most obvious example, with market prices or willingness to pay measured in economic units such as dollars, pounds, or Euros. In addition, recreation values can be measured along cardinal scales such as number of trips taken or number of days spent.

However, values in other realms cannot be meaningfully quantified or measured with a cardinal scale; they may be comparable, but not commensurable. An artist's expression of her aesthetic value of a canyon, for example, as portrayed in an oil painting, cannot be measured with a cardinal scale. Even if we could sell the artist's painting at a gallery, the market price is an expression of the economic value of that particular arrangement of oil paints on a canvas, not an expression of the aesthetic value of the canyon. Similarly, while wilderness users might be willing to pay for their recreation experience, they may also object to the commodification of wilderness (as expressed in protest bids in contingent valuation surveys) and describe spiritual and moral values that are not expressed in dollar figures (O'Neill and Spash 2000; Trainor and Norgaard 1999; Vatn

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2000). Likewise, neither is it meaningful to estimate along a cardinal scale the moral value of biodiversity, the spiritual value of an experience, or the cultural value of language. Comparisons must be made involving these many realms of value when selecting decision criteria with which to compare potential decision outcomes, yet the expressions of value themselves are irreducible.

By classifying values into realms and highlighting their different concepts and expressions, we gain new insight into the problem of plural values and incommensurability. In addition to considerations of cardinal and ordinal ranking and selection of single or multiple decision criteria, the challenge of accounting for plural and incommensurable values in decision making entails engaging multiple, discrete notions of what it means to value something as well as interpreting multiple, irreducible ways in which these values are expressed.

Furthermore, values within distinct realms have discrete modes of social and cultural reproduction.<sup>17</sup> Over time, our values are taught and learned within various spheres of family, society and culture. Thus, while the reproduction of values in the economic realm is mediated through market institutions, cultural, moral and social values are reproduced through processes of cultural and social experience and learning.

The realms of value outlined alphabetically in Table 1 are illustrative, yet not exhaustive, of the many different ways that the landscape of southern Utah is valued. One might, for instance, additionally describe political, psychological or educational values (Nelson 1998). In some contexts, such as drilling for oil in the Arctic National Wildlife Refuge, resources might also have subsistence value. Furthermore, it is neither inconsistent nor irrational for someone to value within multiple realms simultaneously. My value for a canyon may have historical as well as cultural components, religious as well as moral components, social as well as economic components. However, that our values are complex and may engage multiple realms simultaneously does not necessarily make those different realms interchangeable or wholly substitutable.

For example, Jane's willingness to pay (WTP) for entrance to a favourite hiking area is an expression of economic value for access, yet the aesthetic, spiritual or scientific value that she attributes to that hiking area are not necessarily included in that expression of WTP. Those other realms of value may be expressed in artwork that she creates, scientific research that she conducts, or meditation that she performs while she is there. She can value the same location in many ways, each of which has a distinct expression. Likewise, groups in conflict over natural resource management often value that resource in many different ways, or within many different realms.

Similarly, arguments for or against policy can engage multiple realms simultaneously. For example, the pharmacopeia argument for wilderness preservation presented by Nelson (1998) e.g. that wilderness is valuable for the potential medical benefits from flora and fauna, engages both scientific values and instrumental moral values.

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Realm of Value	Concept of Value	Expression of Value	Mode of Value Reproduction	Entities that are Valued
Aesthetic	Beauty	Poetry Writing Painting Photography	Art Experiences Literature	Landscape features: i.e. red rock slot canyons, desert vistas
Cultural	Integral to the practice, preservation and/or reproduction of a culture, group or community	Actions Ritual Cultural norms	Cultural processes	Religious values Language Cultural heritage, traditional rituals, priorities, customs, etc.
Economic	Preferences Market Prices Willingness to Pay (WTP)	Estimated revenue from mining Kaiparowits coal: US \$18.5 billion <sup>38</sup> US \$33 trillion <sup>39</sup>	Market	Rural economic development, Commodities (i.e. coal)
Ecosystem	Ecosystem health or integrity Ecosystem Functions	Northern Rockies Ecosystem Protection Act (H.R. 488) Ecosystem Management	Science of Ecology	Nature's services Undisturbed ecosystem Native species
Historical or Heritage	Links to human past	Official Historic Designation	Cultural Learning	Sites on the National Register of Historic Places Pioneer era tools, buildings, etc.
Moral	Normative judgments	'Biodiversity should be preserved.'	Cultural and social processes Moral Education	Biodiversity
Recreation	Potential for quality recreational experience	Political action Trips taken	Cultural and social processes	Solitude Motorised access Opportunity to spend time with family and friends
Religious/Spiritual	Pathway to enlightenment or redemption	Reverence Hymns, prayers, rituals, faith, devotion	Doctrine Teachings Church meetings Experiences Cultural processes	Hymns, prayers, rituals, faith, devotion Act, event, location, etc., that elicits spiritual awareness, growth or development
Scientific	Contribution to knowledge	GSENM Declaration Scientific inquiry, reports, publications	Scientific disciplines Peer review process Co-evolution of knowledge and value	Endemic and new species Palaeontological discoveries Archaeological sites
Social	Promotes and strengthens social relationships and institutions	Political action Voting Public policy	Cultural and social processes	Social Capital, family integrity, sense of home, small town community Health care, education, public utilities Jobs for local young adults Affordable housing

Table 1. Realms and Concepts of Value

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Conflicts over the management of the Grand Staircase-Escalante National Monument (GSENM) in southern Utah illustrate these distinct value realms. Below I present a more detailed discussion of the constitutive parts of value realms, making reference to the case study.

We assign something **cultural value** if it is integral to the practice, preservation and/or reproduction of a culture. Religious and historical values can be considered types or sub-sets of cultural values. In the GSENM case, the cultural values and heritage of Mormon pioneers and Paiute Indians are evident. For example, languages such as Paiute have cultural value. The extent to which these languages are taught, documented and spoken are expressions as well as modes of reproduction of that value. Archaeological sites may have cultural value in their ancestral significance to contemporary tribes as well as scientific value in their contribution to archaeological knowledge. Specific places or landscape features may also have cultural value. For example, within GSENM Dance Hall Rock, a monolith once used as a gathering place for Mormon pioneers on an epic mission to cross the Colorado River and settle lands on its southern rim has cultural and historical values as expressed in the continued common use of this place name and commemorative signs on location.<sup>18</sup> Cultural values are reproduced via cultural processes and may be attributed to generalised groups with large membership or smaller, more specialised groups. For example, one can observe that Americans value freedom, Mormons value family or engineers value efficiency.

As illustrated by Espeland (1994) in her analysis of the Yavapi response to the public scoping process associated with the proposed Orme dam and by Morrow (1996) in her discussion of the Yup'ik interpretation of the American legal system, value conflict occurs within the cultural realm not only on the level of discrete values, but the larger value system and moral framework of native cultures can conflict with a rational choice framework and the western legal system.<sup>19</sup>

In contrast, **aesthetic values** are judged on a standard of beauty and reproduced in art, literature and cultural education. Expressed in the work of photographers, artists, writers and poets, aesthetic value in the GSENM case is attributed to landscape features such as red-rock slot canyons or desert vistas. **Ecosystem values** are assessed in terms of ecological health or ecosystem integrity and reproduced within the scientific discipline of ecology. The crytobiotic soils and endemic species associated with isolated springs are some of the ecosystem features that contribute to the value of the unique desert ecosystem of GSENM (Belknap 1998). The work done to document and measure the value of ecosystem services aims to legitimate ecosystem values in the policy arena (Daily 1997). While not specific to GSENM, increasing emphasis in the United States on ecosystem management and the text of the Northern Rockies Ecosystem Protection Act are expressions of ecosystem value.<sup>20</sup> We assign **historical value** to something when it provides a meaningful link to the past. Historical

values are reproduced via cultural learning. In the GSENM case, items such as pioneer era buildings, tools and documents and even cultural traditions can have historical value. The many commemorative plaques placed along roadsides by the Daughters of Utah Pioneers, a statewide historical preservation group, are examples of expressed historical value.<sup>21</sup>

We attribute **social value** to entities that promote and strengthen social relationships or institutions. These values are reproduced via cultural and social processes and exemplified in what Putnam (1993) calls 'social capital'. Family integrity, sense of home, 'small town feel', civic participation, and community cohesion are some examples of entities with social value. For communities in southern Utah including the gateway communities to GSENM, paved streets, sidewalks and curbs may have social value in so far as they facilitate smooth travel, clean streets, and safe passage for children walking to school and neighbours walking to visit each other.<sup>22</sup> While many aspects of social value are commonly monetised in economic analyses, enrichment of the vitality and integrity of social relationships and institutions cannot be measured in cardinal monetary units, nor is it necessarily economically substitutable (O'Neill and Spash 2000).

**Moral values** take the form of normative judgments and are reproduced via moral and cultural education. For example, while we may value biodiversity ecologically or scientifically for its ecosystem function or its contribution to knowledge, the judgment that we ought to act in such a way as to preserve and protect biodiversity is a normative judgment, or moral value. We can value an entity such as biodiversity intrinsically as an end, in and of itself, granting worth to the plethora of flora and fauna, situating its value in its existence, akin to the value of a human life.<sup>23</sup> Alternatively we can value biodiversity instrumentally as a means to something else, such as our well being; i.e. because it may hold the key to medical cures or treatments or because it allows for robust food crops.

Other realms of value often have a moral component. Economic values, for example, are grounded in a utilitarian moral framework of maximising net benefit. In contrast, religious values are often described in terms of rights and duties. Thus, in addition to the obvious instrumental value in resource development, those who see natural resources as a gift from God, meant to further human progress, may also see a moral obligation in resource extraction. Both intrinsic and instrumental values are moral values in that they entail normative judgment that justifies and dictates action.

In the GSENM case, traditional Paiutes value the landscape and natural resources on par with humans. Traditional Paiutes see 'mutual respect and responsibility' as guiding the human/nature relationship. For the Paiute the human-like characteristics such as language and capacity for emotion that are attributed to non-human nature imbue the rocks, rivers, stars, plants and animals with moral considerability and a moral status on par with humans. These values are expressed and taught through the telling of Paiute stories and myths.<sup>24</sup>

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**Recreational values** are judged on the potential for a quality recreational experience and are also reproduced via cultural and social processes. Recreation specialists in the United States' federal agencies manage for a spectrum of recreation opportunities from primitive to developed.<sup>25</sup> In the GSENM case, as in many cases of recreation conflict in the American West, some people value solitude and other wilderness qualities, and for others recreational values are based on motorised access. One recreational value that both groups might share is the opportunity to spend quality time with family and friends.

**Religious and spiritual values** offer a pathway to enlightenment, redemption or spiritual growth.<sup>26</sup> They may be associated with an organised religion, but are not necessarily so. Religious values often overlap with cultural or moral values. Hymns, prayers, and rituals can have religious value and may also be themselves expressions of values. Religious and spiritual values can be reproduced via doctrine, church teachings and personal experiences. The GSENM lies within an area that is known as the 'Mormon Culture Region' (Francaviglia 1978). Dating back to the pioneer dictum by religious leader Brigham Young to 'make the desert blossom as a rose', in the Mormon tradition reclamation of the desert into a garden has been a virtue and agriculture a hallowed occupation.<sup>27</sup> In addition, spiritual value has been attributed to pristine nature and wilderness experiences historically and in contemporary times in environmental ethics, nature theology and earth-based spirituality.<sup>28</sup>

Something is valued **scientifically** if it contributes to the advancement of scientific discovery or knowledge. These values are reproduced via activities, standards and education within scientific disciplines. According to the GSENM proclamation, the scientific value of the lands now within the GSENM was the primary impetus and justification for creating the monument (Clinton 1996). As a political act, the GSENM proclamation is thus an expression of scientific value. Prior to monument declaration in September 1996, scientists recognised the potential for new discoveries, but little research had been conducted in the region. Thus, as the scientific potential to find new endemic and rare plant and animal species, palaeontological records and archaeological sites is realised, scientists increasingly value the resource and knowledge 'co-evolves' with values.<sup>29</sup>

In contrast, values in the **economic** realm are conceived as preferences, market value and willingness to pay and are most often expressed in cardinal monetary units of marginal increments.<sup>30</sup> Economic values are reproduced via the market and financial institutions. In the GSENM case, economic values are manifest in jobs, tax revenue and rural development. Within the sub-fields of environmental economics and econometrics, much work has been done to assess values from multiple realms and express them in economic terms. This is often demanded by policy makers and in the United States is in some cases required by law.

Those who strictly defend the utilitarian calculus of neoclassical economics and the self-interested model of rational choice that justifies this economic theory often dismiss the significance of these many realms and expressions of value beyond their attempted translation into individual preferences or willingness to pay. In many cases the normative framework of aggregate utility maximisation and the convention of value expression in cardinal monetary units is uncritically taken as the 'covering value' or decision criterion in policy decisions. Posner, (2000:199) for example, argues that 'incommensurability claims interfere with efforts to evaluate policy according to its contribution to the welfare of those affected and ... this interference is not justified by a vindication of authentic moral values'. A decision-making process that exclusively takes maximisation of net social benefit as 'covering value' does not account for the many additional realms, concepts and expressions of value outlined above. In denying the significance of moral values Posner indirectly denies the validity of non-utilitarian moral reasoning and discredits decision criteria other than aggregate welfare maximisation. He concludes, 'we care about incommensurability claims because they inevitably emerge in social life [as a result of people wanting to show their loyalty to a certain group] but we should not concede that they reflect deeper values' (p. 202).<sup>31</sup> Posner's denial of value pluralism thus goes hand in hand with his rejection of incommensurability. He overlooks what this empirically based typology of value realms illustrates, e.g. that people value in many ways and in many social and cultural contexts.

While very important, economic values are only one of the many realms of value outlined above, cardinal monetary metric is only one of many ways to express value and economic efficiency is only one of many possible decision criteria. Thus, in addition to existing arguments demonstrating the shortcomings of WTP to measure values, if we concede that there exist multiple ways, or realms, in which people value and that within each of those realms the process of valuing has a distinct meaning as well as distinct forms of meaningful expression, then we can see why, in terms of both concept and expression, all values cannot be measured by willingness to pay (WTP).<sup>32</sup>

The argument that values are incommensurable in natural resource policy and decision making is thus, in a sense, an appeal to acknowledge and formally legitimate other realms of value, other forms of value expression, and other decision criteria, or 'covering values'. In this way, claims of value incommensurability challenge the dominance of economic rationality and utilitarian reasoning in natural resource policy, insisting that rational decisions can be made without a common cardinal metric or a single decision criterion (O'Neill 1993).

One might object by claiming that all value expressions are reducible or translatable into WTP or market terms. Life is about trade-offs and even values in other realms have significant economic components. After all, people donate money to their church, pay for equipment and travel for recreation, pay for memberships to environmental organisations and sell cultural artefacts. However, as

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noted above, those monetary exchanges, while expressions of economic values, constitute only part of the complete spectrum of ways in which people value. Few would claim for example, that placing \$8 in a church collection plate on Sunday morning makes the *spiritual* value of the religious service equivalent to or substitutable with the *entertainment* value of the Hollywood movie with a ticket price of \$8 that was seen in the theatre on Saturday night.

In summary, the many ways that we value the environment and natural resources can be categorised into realms. In the GSENM case these include, but are not limited to, aesthetic, cultural, economic, ecosystem, historical, moral, recreational, religious, scientific and social. Within each realm, value is conceived of differently, expressed in irreducible terms and reproduced in diverse arenas. Thus, in addition to concern over cardinal and ordinal ranking and singular and multiple decision criteria, to fully face the problem of incommensurability, environmental decision making must also confront multiple concepts of what it means to value and multiple expressions of value.

#### 4. ACCOUNTING FOR MULTIPLE VALUES AND INCOMMENSURABILITY: THE POTENTIAL OF DELIBERATIVE DECISION MAKING

Recent work in deliberative decision making aims to give voice to multiple values and multiple moral frameworks. Collaborative, democratic processes hold potential as a way to account for multiple values in natural resource decision making that does not require translation into a common metric.<sup>33</sup> However, as I outline below these processes face theoretical and practical challenges and may not be appropriate in all circumstances.

Theories of deliberative democracy legitimate policy decisions, valuations and/or lawmaking via public citizen deliberation (Bohman and Rehg 1997). For example, the deliberative process might be engaged to specifically determine the economic valuation of natural resources for the common good. In these cases, rather than aggregation of individual responses, one could solicit collaborative deliberative responses to contingent valuation questions (Wilson and Howarth 2002). In contrast, by deliberative process I mean a decision process in which interested and affected parties (or representatives thereof) collectively arrive at a mutually agreed upon decision outcome, as in a specific policy or management regime, not necessarily an economic valuation per se. While practitioners or political theorists may raise distinctions, for my purposes here, the term 'deliberative process' is interchangeable with 'collaborative decision making' or 'consensus building'. There are several ways in which discursive processes are well suited to handle incommensurability and multiple realms of value and to deal with the selection of multiple decision criteria.



First, and most significantly, discursive processes *allow for values in each realm to be expressed in their own terms*. Each realm of value has a legitimate place in policy and decision making. In accordance with democratic principles, e.g. as a value that is held by an interested and affected party, each realm of value ought to be given at least initial consideration in its own terms. When values conflict in natural resource decision making it is likely that each interested and affected party simultaneously holds values in more than one realm or that a wide variety of realms are represented in the values of different parties. In deliberative, discursive processes each party has the opportunity to express his/her/their values in the terms that most accurately represent their values without requiring a common cardinal metric.

Second, identifying common ground is an important step in conflict resolution (Susskind, McKearnan et al. 1999). Given the possibility for the expression of value in multiple terms, the discursive process *can disclose commonly held, or shared, values that might not otherwise have been evident*. This may seem counter intuitive; it may seem that shared values are most likely identified when values are expressed in a single common form or within a common realm. However, if only one form of value expression is allowed, values in other realms that may be held in common may never be identified or granted legitimacy in the decision process. For example, in the GSENM case, public debate over monument designation and management focuses on the local economic development lost by stymied coal development (Liston 2001). In individual interviews, however, some local residents express an aesthetic appreciation for the landscape that parallels expressions of aesthetic value by wilderness advocates.<sup>34</sup> Without the opportunity for dialogue and discussion of value realms beyond the economic, this commonly held aesthetic value could not be recognised as such. In addition, probing the expression and reproduction of values within a realm via the deliberative or discursive process offers opportunities to suggest creative, new alternative forms of value expression and reproduction that circumvent the need for commensurability.

Finally, *the discursive process allows for discussion not only of the specific values engaged, but also of the decision criterion or set of criteria that ought to be used when comparing values to arrive at a decision*. By participating in this process, the people most affected by the decision are thus able to shape both the criteria used in decision making and the outcome. In situations of land management in the American West, this has the potential to preclude decisions made by government bureaucrats in Washington, D.C. who are unfamiliar with the specific social, cultural and resource conditions at hand (Kemmis 2001).

Thus, one way to overcome the problem of incommensurability and multiple value realms is to give voice to the full range of values and value expressions, a task to which deliberative democracy is particularly well suited. Work that develops and refines collaborative processes such as value juries and focus groups are presently making headway in this arena and have been suggested

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in the GSENM case.<sup>35</sup> However, in spite of these attractive features, there are several theoretical and practical objections to discursive forms of decision making (Bohman and Rehg 1997).

First, one might object that deliberative processes cannot be as well informed as those made by experts in the field. One might argue that common citizens can exercise their political freedom via voting, but are ill-equipped to make decisions with direct consequences in policy or management, especially those that require command of scientific or technical information. Yet, deliberative processes do not necessarily preclude informed decision making. Scientific advisory panels can provide and interpret scientific or technical information for deliberative groups of citizens (McCreary, Gamman et al. 1999). Furthermore, it is reasonable to assume that citizens are intelligent and capable of understanding the details necessary for informed decision making.

A second objection might be that people will act out of self interest and not step beyond their personal stake in the issue to make a decision for the 'common good'. Situations of unbalanced political or economic power among interested parties may lead to cooptation of the process and outcomes that favour the interests of the powerful. However, that this situation can occur does not preclude relative balance of power in some cases, nor does it prevent decisions in the 'common good' from transpiring when this balance of power is in place.

A third objection can be made that emphasis on the discursive or deliberative process can too readily lead to oversight of the substantive content of the decision outcome. In this way 'correct' or 'successful' decisions come to be defined entirely on procedural grounds and the outcome of the process becomes inconsequential. Perhaps value conflict cannot nor should not be resolved, or perhaps the individuals engaged in deliberation have vicious or sinister motives and arrive at a hurtful, inequitable or unjust outcome. Procedural criteria alone are insufficient arbiters of sound decisions. Yet, political justification rests on norms of equity and reciprocity, not on purely procedural grounds. Substantive as well as procedural principles can be consistently integrated into deliberative democratic theory (Christano 1997; Davies 2001, Gutmann 2002).

The practical limitations of deliberative processes are clearly outlined in conflict resolution literature, which notes the conditions that must exist for a collaborative process to result in a mutually agreed upon, long-lasting outcome (Susskind, McKernan et al. 1999). In practice, one or more of these conditions may not hold, diminishing the potency of deliberative processes in natural resource decision making. Below, I briefly outline these conditions and discuss situations in which they may be difficult to achieve.

First, in order to fully account for the full range of values and ensure that all parties will stand by the final outcome, *all interested and affected parties* (or an approved representative thereof) *must participate in the process* (Susskind, McKernan et al. 1999). However, this is not always logistically or practically possible. For example, it may be the case that not everyone has an incentive

to participate. Some parties may find an alternative strategy, such as litigation, more likely to meet their interests (Fisher and Ury 1981). In Utah, not far from the GSENM, representatives from Emery County government, local businesses, local residents and the State tourism department worked hard to collaboratively formulate a plan for land use management in an area known as the San Rafael Swell. The result of their collaboration was an innovative proposal for designation of a National Heritage and Conservation Area, which was designed to promote both economic development and protection of the desert ecosystem (Emery County Public Lands Council). However, the most prominent state-wide wilderness preservation organisation, the Southern Utah Wilderness Alliance (SUWA) declined an invitation to participate in this collaborative process because they did not trust that their voice would be genuinely heard.<sup>36</sup> Subsequently, SUWA was successful in lobbying against the establishment of the proposed National Heritage and Conservation Area on the grounds that it did not protect enough of the ecosystem as wilderness.<sup>37</sup> As this example illustrates, if a key interested and affected party is absent from the deliberation, they are likely to disapprove of the decision outcome and block its implementation.

Second, as noted above, collaborative processes require relative *balance of power* between parties. An unmitigatable power imbalance may be political, economic or based in resource ownership or management jurisdiction. For example, in the GSENM case the Bureau of Land Management (BLM) has the legal authority and responsibility for managing the resources. A citizen group may be asked to deliberate on an issue such as resource management in the GSENM, yet the result of their efforts are unlikely to be more than recommendation to the land management agency and may not carry any potency in policy or land management. While a local community advisory panel has been formed, the BLM cannot abrogate its decision-making authority or responsibility to a deliberative group without explicit legislative or policy direction. Thus, in some cases, established institutions and legal responsibilities can diminish the effectiveness of the deliberative process. Institutional changes may be required before deliberative processes have political potency.

Third, as illustrated by above example of SUWA declining an invitation to participate in a collaborative process, *mutual trust and respect are vital* for collaborative, deliberative processes to proceed (Deutsch 1973). In some cases, such as GSENM, the underlying conflict may have such a long and deep-seated history, that the interested and affected parties do not trust each other and as a result will not trust that the process will yield satisfactory results (Trainor 2002).

Finally, consensus building *takes time*. Participatory processes that involve interested and affected parties meeting together to reach a mutually agreed upon solution to resource conflict require considerable time and energy. It may take months or years to build up a solid working group. Indeed part of the benefit of these processes is that they build relationships between groups that can facilitate future conflict resolution (Susskind et al. 1999). Situations that require

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decisions be made quickly are therefore not good candidates for collaborative decision processes.

## 5. CONCLUSION

I have outlined a framework that characterises plural natural resource values into related yet distinct realms. Within each realm value is conceived of differently, expressed in different terms and reproduced via different social and cultural processes.

Economic values and their expression with a cardinal monetary metric are essential in natural resource policy making, yet they are only one of many realms of value. Given this diversity of values, it is important to explicitly acknowledge and consider each realm in its own terms, rather than to rely solely on an assessment that views all values through one lens. The typology of value realms presented here systematically organises the many ways that humans value the environment, making this plurality of values transparent to decision makers, whether they are in discursive processes or not. The GSENM case study illustrates how these plural values can be perceived as incommensurable and why conflicts between those values can be difficult to resolve. Discursive, collaborative processes are well suited to potentially resolve value conflicts that include consideration of multiple realms of value in policy and decision making without requiring a common metric, yet they are not without theoretical and practical challenges.

## NOTES

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<sup>1</sup> Anderson 1993; Andrews and Waits 1978; Beckerman and Pasek 1997; Brown, Peterson et al. 1995; Davies 2001; Faucheux and Froger 1995; Hargrove 1989; Holland 1997; Jacobs 1997; O'Neill 1997b; Renn 1999; Vatn and Bromley 1994.

<sup>2</sup> See Anderson (1993) for discussion of plural values. See O'Neill (1997b) and Sunstein (1994) for arguments of value incommensurability. Hadari (1988) emphasises the significance of incommensurability and value pluralism in the context of normative

theory. O'Neill (1997a) further argues that refining methods of monetary valuation is a misguided avenue for improving environmental management.

<sup>3</sup> Aldred 2002; Beckerman and Pasek 1997; Martinez-Alier, Munda et al. 1999; O'Neill 1997b; O'Neill and Spash 2000; Sunstein 1994.

<sup>4</sup> O'Neill and Spash 2000; Prior 1998; Sagoff 1988; Vadjal and O'Connor 1994.

<sup>5</sup> Martinez-Alier, Munda et al. 1999; O'Neill 1993; Sterling 1997. One might argue, as does Chang (1997b), that plural values do not preclude comparability or rational decision making because even when multiple expressions of value are engaged, we can always choose the strongest value content; she calls this the 'nominal-notable test'. Chang argues that when faced with a comparison between two items from different realms of value, a comparison can be made on the basis of excellence, or notability within that realm. By constructing a continuum of quality along the axis of comparison, she argues that even diverse values are comparable. However, in her binomial comparisons, Chang loses sight of how plural values are manifest in real-life situations. As the following typology illustrates, in the GSENM case it is not simply a comparison of scientific with aesthetic values, for example. Decision makers must also account for cultural, historical, and moral values of both local residents and distant citizens; as Martinez-Alier et al. (1999) note, a decision situation may require accounting for multiple criteria simultaneously. Thus any given management option might be simultaneously nominal and notable along the quality continuum of several different realms of value. We are then faced with the challenge of providing a satisfactory justification for elevating one realm of value over another in our comparison or a means by which to make a decision on the basis of more than one 'covering value'.

<sup>6</sup> The selection of a 'covering value' will be influenced by what Chang (1997b:7) calls, 'choice value', or "'what matters" in the choice situation'. Because the choice value will determine the outcome of comparison and of the policy decision, an equitable solution must also answer the question, what matters *to whom*?

<sup>7</sup> Geary 1985; May 1987; Roundy 2000; Stoll 1997; Trainor 2002; Widtsoe 1947. Members of the Church of Jesus-Christ of Latter-Day Saints (LDS) are commonly known as Mormons. Hereafter, I use 'LDS' and 'Mormon' interchangeably.

<sup>8</sup> Holt 1992; Stoffle, Carroll et al. 2001.

<sup>9</sup> Goodman and McCool 1999; <http://www.suwa.org>.

<sup>10</sup> In the United States, the term '*wilderness*' has at least two connotations. It can mean any piece of wild, undeveloped land, regardless of ownership; here used in contrast to 'civilisation' and historically carrying connotations of a place that is dangerous or hostile (Nash, 1982). In addition, the Wilderness Act of 1964 legally defines *federally designated wilderness* as an area of at least five thousand acres of federally owned land, that 'appears to have been affected primarily by the forces of nature' and 'has outstanding opportunities for solitude' (Public Law 88-577, reprinted in Callicott and Nelson 1998: 120-30). Wilderness in this legal sense can be designated only by an act of Congress. Many federally designated wilderness areas exist within the borders of national parks and monuments, yet the entire area of the parks and monuments is not necessarily federally designated wilderness.

A national *monument* is similar to a national *park* in its protected status, yet unlike a National Park, a National Monument can be designated by Presidential order and thus does not require Congressional approval. The National Park Service administers most

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national monuments in the United States, however GSENM was the first of now several national monuments to be managed by the Bureau of Land Management, an agency that historically has managed land primarily for grazing, mining, and logging.

<sup>11</sup> Additional perspectives such as those of industry or government might also be described.

<sup>12</sup> See [http://www.suwa.org/page.php?page\\_name=about\\_mission](http://www.suwa.org/page.php?page_name=about_mission) , downloaded 23 Aug. 2004.

<sup>13</sup> Anderson 1993; Gruen 1993.

<sup>14</sup> Gregory (2002: 467) refers to these as ‘dimensions’ of value. Note also that people value as individuals and collectively as members of groups.

<sup>15</sup> In the GSENM case, see for example, Miller (1959).

<sup>16</sup> In the GSENM case, see for example, Numkena (1998).

<sup>17</sup> See Merchant (1989) for discussion of the reproduction of values, ideas and institutions. Richard Norgaard deserves credit for emphasising the importance of value reproduction in this framework.

<sup>18</sup> Miller (1959) provides a more complete description and discussion of Dance Hall Rock and the Mormon Hole-In-the-Rock expedition.

<sup>19</sup> It is possible that these value conflicts are linked to contrasting epistemological and ontological world views. However, complete investigation of this possibility is beyond the scope of this paper.

<sup>20</sup> Sexton, Malk et al. 1999. See: <http://thomas.loc.gov/cgi-bin/bdquery/z?d107:h.r.00488>:

<sup>21</sup> See: <http://history.utah.gov/library/markers.html>.

<sup>22</sup> In the United States, cities, towns or villages that are located near an entrance to a National Park or Monument are known as ‘gateway communities’. The social value of paved streets, sidewalks and curbs was discussed in the Kanab City Council Meeting, June 13, 2000, Kanab, UT.

<sup>23</sup> The rich literature on intrinsic value of nature is beyond the scope of discussion at this time. See for example, Callicott (1986), Cheney (1992), Elliot (1992), Gruen (2002), Hargrove (1992), Lee (1996), More (1996) and O’Neill (1992).

<sup>24</sup> Interview with Angelita Bullets, June 15, 2000, Pipe Spring, AZ; Martineau 1992; Stoffle, Carroll et al. 2001.

<sup>25</sup> See Hendee (1990) for explanation of the recreation opportunity spectrum.

<sup>26</sup> The realms of value presented here are not meant to be rigid, but rather illustrative. In some cases it would be desirable to distinguish religious from spiritual values and consider them two separate realms. For my purposes here, however, this distinction is not significant.

<sup>27</sup> The phrase ‘make the desert blossom as a rose’ originates from Isaiah 35:1. It was used by LDS Church leader Brigham Young in his directorate to establish Zion and the theocratic State of Deseret (Alexander 2001). For evidence of the value of agriculture in Mormon teachings see Geary (1985: 31–32), Peterson (1994: 5), Stoll (1997: 111), and Widtsoe (1947).

- <sup>28</sup> Christ 1990; Nash 1982; Rolston 1986; Starhawk 1990; Stoll 1997; Williams, Smart et al. 1998.
- <sup>29</sup> Interview with Barry Albright, Curator of Geology and Palentology, Museum of Northern Arizona, Aug. 31, 2001; [http://www.ut.blm.gov/monument/Science\\_and\\_Research/science\\_and\\_research.html](http://www.ut.blm.gov/monument/Science_and_Research/science_and_research.html); Norgaard, Scholz et al. 2001.
- <sup>30</sup> Freeman 1993; Hanley and Spash 1993; O'Neill and Spash 2000.
- <sup>31</sup> By framing his argument in this way, Posner also overlooks the intricacies of interaction between individual, collective and institutional values discussed above.
- <sup>32</sup> Challenges to WTP as a measure of value can be found from within neoclassical economics as well as in critique thereof (Hausman 1993; Kahneman and Knetsch 1992; Martinez-Alier, Munda et al. 1999; O'Neill 1993; Sagoff 1988; Spash 2000; Vatn and Bromley 1994).
- <sup>33</sup> Davies 2001; Forester 1999; Gregory 2002; Kemmis 2001; O'Neill and Spash 2000, Weston 2002; Wilson and Howarth 2002.
- <sup>34</sup> Interview with anonymous Kanab resident, May 23, 2001, Kanab, UT, U.S.A..
- <sup>35</sup> Davies 2001; Goodman and McCool 1999; Gregory 2002; McCool 2001; O'Neill and Spash 2000.
- <sup>36</sup> Interview with Dave Pacheco and Ken Venables, June 28, 2000, Salt Lake City, UT.
- <sup>37</sup> See <http://www.suwa.org/alerts/00mar08.html>.
- <sup>38</sup> In 1997 dollars, as reported in Allison et al. (1997: Appendix B).
- <sup>39</sup> This is the figure that Costanza et al cite as the total value of global ecosystem services (Costanza 1997).

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