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Communicating the Climate Crisis by Design

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Successes/failures of integrally-informed presentations of "Solving the Climate Crisis by Design," based on thirteen years of integral design scholarship, to four audiences/countries using four integrally-informed models.

Abstract

From different integral framings the climate crisis looks radically different and its solutions also vary. As author and editor of a book on integral sustainable design, we each have 13 years of experience in the scholarship of applying integral thought. Recently, we have delivered numerous presentations on the topic of "Solving the Climate Crisis by Design." This paper presents four different integrally-informed approaches for disseminating this scholarship and research to academic and crossover communities. Audiences in Lebanon, Scotland, Australia and USA consisted of design and construction schools, building science educators and a mixed audience at a spirituality and peace centre. Models included two different multiperspectival "4-quadrant" approaches, a "Big-3" approach, and a format where worldview levels dominate. Each presents the problem of climate change and how building and urban design can provide solutions. Presentation design and scholarship about this work are guided by an integral methodological pluralism (IMP) with reflective practitioner (Schön) and emergent learning (Darling) influences. We typically present a narrative of 40-60 minutes, informed by a scholarship history where an integral approach informs the content, the message, the structure of the talks, their delivery, and how we assess and improve this dissemination over time. We learned to only speak integral to integral, that much bad news activates a collective shadow, that pluralistic values and rational science miss the opportunity to enroll the pre-rational level and that a multilevel message is needed.

Keywords: climate change, integral communications, public speaking, architecture, sustainable design, worldviews, levels of development

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1 An Extended Foreword

This is not a research paper in the conventional sense. Rather, it is an essay in which, as engaged scholars, we want to tell you a story about sharing what works and what doesn't about four experiments with integrally-informed climate change presentations to the building community around the world.

Integral Institute

We, the authors, met in Colorado at the Integral Institute in 2004 for a week-long workshop with Ken Wilber on the topic of "Integral Ecology and Sustainability." We had both been following Wilber in his early talks online and reading his books. As a result of our work in our respective fields—Mark as a Professor of Architecture in Tennessee, and Susanne as a Conservation Commission Chair in Massachusetts—we were each awarded scholarships to attend the week-long event.

Mark led a workshop that applied integral thinking to watershed planning in the Beaver Creek valley near Knoxville, and Susanne chose to participate in this workshop because of its close relationship to a wetlands protection project she was working on at home.[3] One of the challenges for participants was to generate an integral communication about the various projects using the "Big Three" (Art, Science, and Morals from first, second and third person) at multiple levels of worldview (Figure 1).[4, 5]

Fig. 1 Structure for integral communications, from the 2004 Integral Ecology & Sustainability Workshop

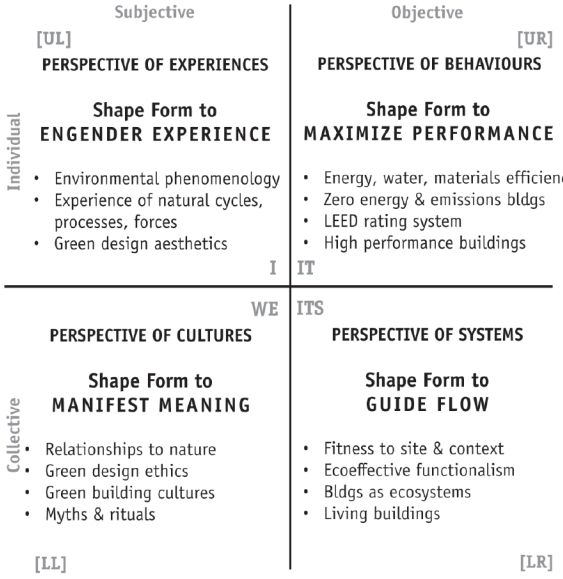

Fig. 2 Four fundamental perspectives on sustainable design

We won the internal seminar contest among the workshops. The prize was a one-hour conference call with Wilber. The two of us worked on the agenda for that call. The call itself, on the topic of the "integral city," involved our whole team continued for two hours. That was the first time we had ever worked together after the workshop.

3 DeKay, Mark (2004). Integral Communication for the Beaver Creek Green Infrastructure Plan, Integral Ecology & Sustainability. Conference, sponsored by the Integral Institute, Nov. 8-13, Denver, CO

4 Wilber, Ken (2007). *The Integral Vision: A Very Short Introduction to the Revolutionary Integral Approach to Life, God, the Universe, and Everything*. Shambhala, Boston, p66–70

5 Colours in Fig 1 from Beck, Don and Christopher Cowan (1996). *Spiral Dynamics: Mastering Values, Leadership and Change*. Blackwell

	Interior Perspectives		Exterior Perpectives	
Complexity level	Experiences (UL) self, intentions and consciousness	Cultures (LL) worldview and meaning	Behaviors (UR) parts and performance	Systems (LR) social and environmental
Level 4 INTEGRAL Transformative Networking	Self-Mediation	Nature United	Responsive Structures	Living Systems
Level 3 POSTMODERN Pluralistic Practices	Contextual Mediation	Nature Saved	Cyclic Analogues	Complex Systems
Level 2 MODERN Independent Professionalism	Intellectual Mediation	Natured Used	Building Science	Logical Systems
Level 1 TRADITIONAL Guild Traditions	Sensory Mediation	Nature Managed	Embedded Practices	Tacit Systems

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Fig. 3 16 prospects on sustainable design (from ISD)

Fig. 4 Al Gore teaching at the Climate Reality Leadership Corps training

Integral design

Two years later, Susanne moved to Knoxville and we lived on a houseboat in the Tennessee River, where we married. Nine years ago, Mark wrote *Integral Sustainable Design: transformative perspectives* (*ISD*), which was the first time that integral theory was applied to architecture and design.[6] The four quadrants as applied to sustainable design are shown in Figure 2. Susanne was the editor and an intellectual partner throughout the process. The book defined sixteen prospects (Kosmic addresses in integral parlance) in a version of an all-quadrant, all-level (AQAL) model of sustainable design (See Figure 3). The *ISD* book has given both of us a new future, based on the interest it has generated around the world.

Climate Reality

As a presentation coach, Susanne had already been mentoring Mark in all of his keynote speeches. One morning, as we sat to have coffee in our favourite light-filled space—without knowing how or when we would deliver it—we decided to take some collective action on developing a talk about climate change. Later that day, former US Vice-President Al Gore wrote to Susanne and invited us to the next training the following week in Chicago to become Climate Reality Leaders (Figure 4)[7]. Of course, we dropped everything and drove ten hours to Chicago, returning inspired with new intentions. The idea presented by the Climate Reality Project was to get the facts about climate change and its impacts out as broadly and as often as possible, to "win the argument" with climate deniers, and to overturn with scientific facts all of the "myths" and "alternative facts" being propagated.

By example, Gore spent perhaps 80% of the time with the "bad news" reality of what is happening with climate change as reported by top-tier climate scientists that he recruited to help tell the story. This was followed near the end of the training with some "good news" about what individuals, organizations and governments were doing to help solve the problem and where there were signs of hope. If we were going to offer presentations on climate change, Gore

6 DeKay, Mark (2011). *Integral Sustainable Design: transformative perspectives.* Ed. Susanne Bennett. Earthscan, London

7 Climate Reality Leadership Corps, The Climate Reality Project, climaterealityproject.org/training

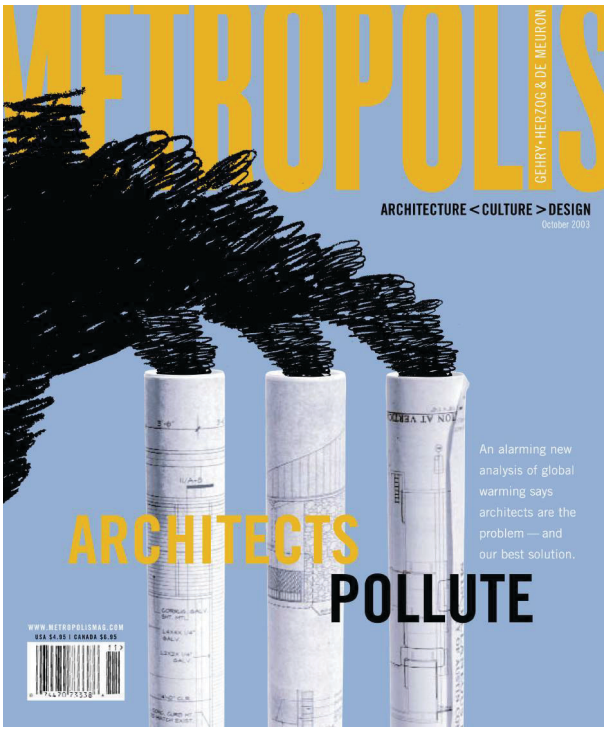


Fig. 5 Cover of Metropolis Magazine, October, 2003

suggested, people needed some things they could personally do about it. That was covered in the last few slides.

Susanne had also attended an extensive training by The Pachamama Alliance, which presented the environmental crisis and potential actions in a format similar to that of the Climate Reality Project: tell them until it hurts how bad the planetary ecological situation really is, then try to enroll people in becoming part of the solution.[8]

The architecture of climate change

Back in October of 2003, the cover of *Metropolis Magazine* declared that "Architects Pollute" (Figure 5). Architects began to wake up to the fact that buildings use about half of world's energy, that they run almost entirely on fossil fuels, and that therefore buildings are responsible for about half of greenhouse gases and the resulting change in climate. Since buildings use almost half of the fossil fuels consumed on the planet and are responsible for more than 40% of carbon emissions, we decided that the audience we wanted to address in our presentations was architects and others in the building and urban design community.

Architects today are inhabiting a most exciting time in history. A young architect today will live to find out whether or not we will succeed as a species in doing collectively what no past generation ever even imagined doing: keeping the planet from warming by 2 degrees C. It is mainly because of this extraordinary challenge that we assert that the profession is also at the most exciting time in architectural history. The larger the challenge, the larger is the opportunity to make a difference. Why we talk to architects is that they hold a great responsibility and we actually have some concrete solutions to offer that profession.

A plan emerges

The way forward for us as climate presenters became clear: We would combine the knowledge about passive site-based energy design from Mark's co-authored book, *Sun, Wind & Light: architectural design strategies*, using Integral Theory as a structure and the Bad News /Good News format that Gore and Pachamama had given us to create our talk.[9] In addition, since Mark was already being invited to give lectures, we would offer to speak about climate change at those opportunities. Working with a simple idea from *emergent learning* (more on that idea soon), developing and offering the presentations that would follow from the engagements that were already in the pipeline. So far, our audiences have been a range of students, professors, researchers, administrators and the general public.

8 Pachamama Alliance, pachamama.org

9 DeKay, Mark and G. Z. Brown (2014). *Sun, Wind & Light: architectural design strategies,* 3rd ed. Ed. Susanne Bennett. Wiley, Hoboken, NJ

We have been continuing to develop our thinking about the nature of climate change and the role of buildings in creating and solving it. We use the Integral model to frame how to understand climate change, and then we use it again to suggest what architects, builders and building scientists can do about it. The core of our scholarship is about sustainable design, but this paper is about what we have learned in the broad dissemination of this scholarship, in giving talks we call, "Solving the Climate Crisis by Design."

We have actually used four different versions of an integral framing to structure our talks. As we experiment, we keep evolving it based on what works and what does not. Again, the usefulness of collective emergent learning has informed the evolution of the talks all along the way.

2 Lebanon: First the Bad News, Then the Good News

We were invited to give a keynote and 3-day workshop for Sustainability Week at the architecture school of the American University in Beirut. "Solving the Climate Crisis by Design" had its first run at the end of that three days.[10] We presented to a packed auditorium and were given a standing ovation. We were, as it turned out, speaking to the choir; nevertheless, we learned an important lesson: the choir of the young and converted were suffering when confronted with contemplating their future in an environmental hell.

In following both Al Gore's and the Pachamama organization's plan of introducing the bad news before switching to the good news, we presented a lot of bad news—UR fossil fuel burning and CO_2 and greenhouse gas bad news, UL undeveloped consciousness and disappearing experiences bad news, LR ecological and social system breakdown bad news, and LL disconnection from nature bad news (Figure 6). It was too much bad news all at once.

Somewhere before the 60 minute talk was only half done, it was easy to witness from the podium a terror arising in the audience. The audience was highly unsettled by

10 DeKay, Mark and Susanne Bennett (2016). Keynote: Solving the Climate Crisis by Design, lecture delivered for Sustainable Design Week, American University in Beirut, October

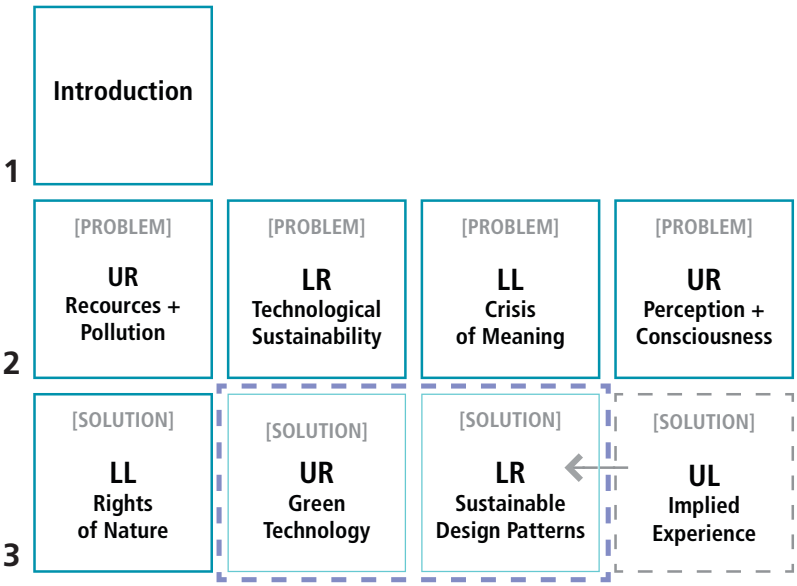


Fig. 6 Outline structure of the Beirut presentation: First, the (overwhelming) bad news in four quadrants

Fig. 7 The reality of climate change is actually very frightening.

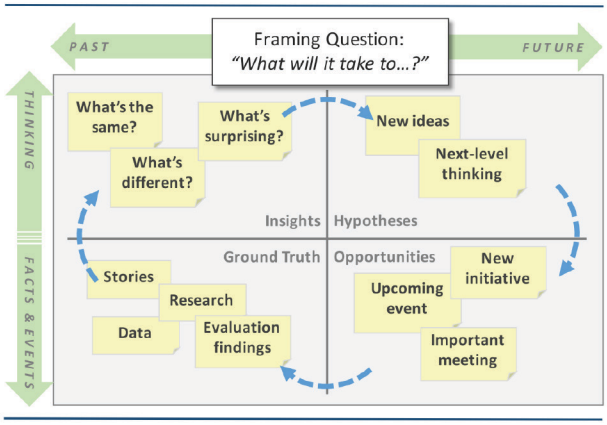


Fig. 8 The Emergent Learning process

all the bad news of climate change and of buildings as such a significant contributing factor, especially when most of them were being trained to go into the world and construct buildings. The implication of what we were saying was that their future profession was one of the biggest causes of global climate change, the impact of which are felt deeply in the Middle East, where they are in the midst of the longest and worst drought in 800 years. We actually had to stop and ask people to stay with us, to reassure them that the good news of how design could contribute to the solution was about to be presented.

Qualitative psychological research provides evidence that some people are deeply affected by feelings of loss, helplessness, and frustration due to their inability to feel like they are making a difference in stopping climate change.[11] One of the coping mechanisms is to avoid the problem in order to avoid the feelings. Sociologists have noted that after natural disasters there are higher levels of suicide, substance abuse, depression, anxiety, violence, aggression, interpersonal difficulties, and job-related difficulties. Climate change is taking a huge toll on our mental health (Figure 7).

Emergent Learning

As a part of our work, we are continually reassessing the effectiveness of our methods. We use an idea called *emergent learning* (Figure 8).[12] Emergent learning is an approach grown from system thinking by Fourth Quadrant Partners, a non-profit consulting group, to bringing forth the most effective solutions to complex problems in a peer group learning and action environment.[13] It encourages groups to experiment with strategies in short time loops to achieve the outcomes they say they want.

In utilizing the emergent learning model after the Beirut talk, we realized all that bad news all at once really didn't work. In our enthusiasm to let people know about the severity of the problem, we had also short-changed the good news when we eventually got around to it. We briefly cover the LL solutions from the Cultures Perspective, and collapsed without much distinction the UR Behaviours Perspective and the LR Systems Perspective, while only really implying the

11 Obradovich, Nick, Robyn Migliorini, Martin P. Paulus and Iyad Rahwan (2018). Empirical Evidence of Mental Health Risks Posed by Climate Change, *Proceedings of the National Academy of Science of the USA,* Oct 23, Vol 115, No 43, p10953–10958.

12 Darling, Marilyn, Heidi Guber, Jillaine Smith and James Stiles (2016). Emergent Learning: A Framework for Whole-System Strategy, Learning, and Adaptation. *The Foundation Review,* 8(1). doi:10.9707/1944-5660.1284

13 Fourth Quadrant Partners, www.4qpartners.com

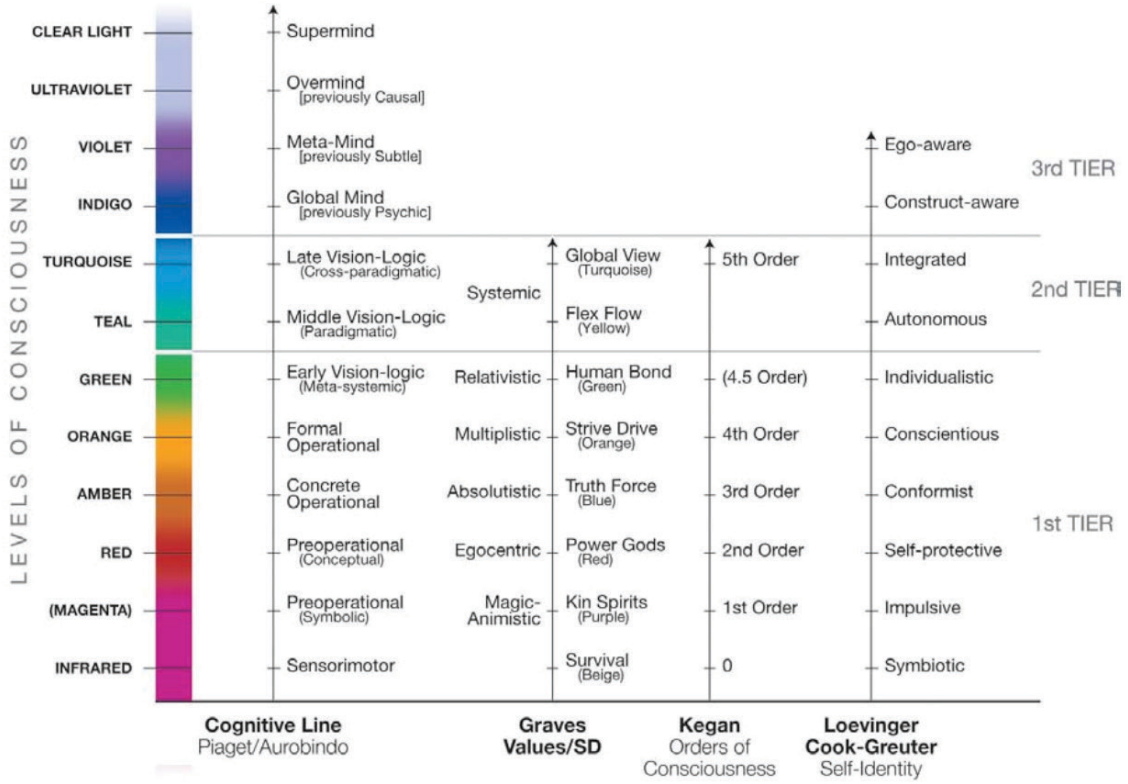


Fig. 9 Wilber's colour scheme for registering levels of consciousness mapping some major developmental lines

critical UL Experiences Perspective. Clearly it was time for some insight and a new hypothesis. In the next talk we would continue to use the four-quadrant approach because it covers all the bases of climate change, since ordinarily climate change is only referred to as a technological [UR] issue concerned with energy use and carbon pollution. What if we were to distribute both the bad news and the good news, the problems and the solutions, throughout so that the audience did not go into shock?

3 Scotland: The Good, the True and the Beautiful of Climate Change

During Mark's sabbatical, he was invited to consult with an energy software company based in Glasgow, Scotland, which was using his work from the *Sun, Wind & Light* book. While there, we were invited to give a talk at Edinburgh International Centre for Spirituality and Peace (Figure 10).[14] This was a different audience, one without architects. The conference theme was "Spiritual and Integral Ecology Perspectives on Art, Place and Nature."

In Beirut, speaking to an academic audience, we had avoided any talk of a spiritual component to the climate crisis. We had actually, other than in a general holarchic understructure to our sustainable design patterns and strategies, avoided hierarchy and holarchy altogether. We needed to develop something specific to this new audience. Given that we had a reasonable idea that we would find a dominant Green/pluralist worldview with some Teal/integral sprinkled in (Integral was in the conference title after all), it was clear that we both could and needed to address levels of development or stages of worldview.

14 Edinburgh International Centre for Spirituality and Peace, www.eicsp.org

Fig. 10 Edinburgh International Centre for Spirituality and Peace at the Augustine United Church

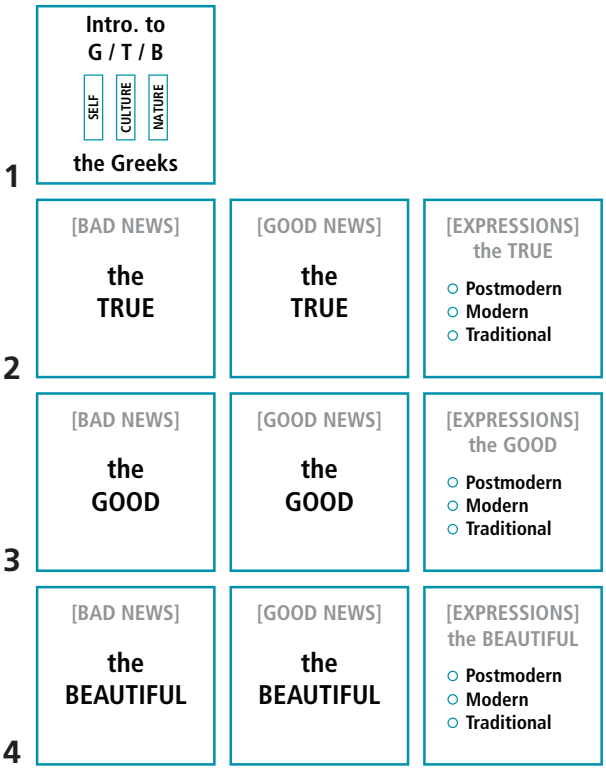


Fig. 11 Structure of the Edinburgh talk: The bad news, good news and healthy expressions from three worldviews in three domains

For the remainder of this paper, references to colour designations as a non-judgemental labelling for developmental levels or stages follow Wilber's spectral scheme from *Integral Spirituality.*[15] Figure 9 shows these colours and a comparison with the earlier spectrum from Beck and Cowan used in the original Integral Institute workshop.[16]

We started to see that the cultural expression of Amber/ mythic allied with capitalist orange vs. the rational side of Orange allied with Green pluralism (with its nature-inclusive values), which has come to frame the climate change conversation across the globe, was not a very Integral way to look at development. The challenge was not only to frame out topic in terms of its problems and solutions in all quadrants, it was also to find the workability of each developmental level and what it could contribute to the solution. Our challenge was also to articulate the "dignities" of each level, to find and give expression to what could be "included" with transcending the unworkable from each level. We needed not just an AQ approach but rather an AQAL content messaged to an AL audience.[17]

In this talk we had only forty-five minutes, so we compressed the four quadrants into the "Big 3," offering the bad news and good news, spreading out the pain with the cure in a talk we called "The Good, the

15 Wilber, Ken (2006). *Integral Spirituality: A Startling New Role for Religion in the Modern and Postmodern World*. Integral Books, Boston

16 Figure from Wilber (2006), p69

17 AQAL stands for All-Quadrant, All-Level, two primary elements of the Integral map: AQ for all-quadrants (primary perspectives) and AL for all-levels (or stages) of complexity or development.

GOOD Future-based Expressions

Postmodern:

Working to solve climate change and save the earth has really brought our community together.

Modern:

We are managing our energy sources and environmental sinks to prosper now and in the future.

Traditional:

We use the sun and wind on our land so we can take care of what God gave us.

Fig. 12 Future-based healthy expressions from the perspective of the GOOD at three different levels of worldview

True and the Beautiful of Climate Change."- Figure 11 shows the overall structure of the Edinburgh presentation in a rhythm of bad news/problem, good news/solution and healthy expressions from three levels in each of the knowledge domains/primary perspectives of the good/morals, the true/science and the beautiful/art.[18]

This presentation took place in an old church in downtown Edinburgh (Figure 10), and we therefore stressed the spiritual nature of the planet and our responsibility to protect and nurture it. Figure 11 shows that for each domain of the good, true and beautiful, we generated typical affirmative expressions that might be said by someone looking at climate change from that combination of perspective and altitude forming a unique prospect (Kosmic address). We write these expression as if speaking from a future already enacted. This reflects some insights offered by Steve Zaffron and Dave Logan that they term, "the three laws of performance."[19]

Their second laws says that, "How a situation occurs, arises in language." People at each level understand the climate crisis and what is possible to do about it in terms of language, as they speak and hear it. Zaffron and Logan's third law of performance is that, "Future-based language transforms how situations occur to people." In the future, things that don't seem possible in the present are more plausible. People are more willing to engage with even difficult ideas and propositions, and speaking from the future somehow becomes a creative act, as if one is calling it forth. Figure 12 shows the future-based healthy expressions from the LL Cultures perspective,"the Good", as might be spoken by individuals holding a Traditional (Amber), Modern (Orange) and Postmodern (Green) worldview. To hold all these at once, to see them each as positive and valuable, and to see them in relation to each other, is of course, an Integral level characteristic.

Things went very well in the Edinburgh presentation, yet we also encountered the "mean green meme" that Wilber cautions about. We suggested that ultimately, Red, Amber and much of Orange worldviews require social regulation in the form of new codes, development rules, etc., to change behaviours to actions that support Green and higher values, such as environmental preservation and hi-performance buildings. In the question and answer period, some in the audience were incensed we would suggest anything so hierarchically top down, asking, "Who gets to decide what I have to do?" Luckily, we were prepared for this

18 DeKay, Mark and Susanne Bennett (2017). Keynote: The Good, the True and the Beautiful of Climate Change, at conference: Spiritual and Integral Ecology Perspectives on Art, Place and Nature, Oct 21, Edinburgh International Centre for Spirituality and Peace, Edinburgh, Scotland

19 Zaffron, Steve and Dave Logan (2009). *The Three Laws of Performance: Rewriting the Future of Your Organization and Your Life*. Josey-Bass, San Francisco

and quickly put the upset to rest, because, after all, in democratic societies, codes are an expression of shared social values and in the building industry, these are arrived at by a multi-stakeholder public process—both values that Green can align behind. However, in considering the next presentation, the recognition that we were sure to raise the Green ire again informed our speaking.

We were speaking Teal/Integral to Green. Back in our 2004 Integral Institute seminar, where we first met, David Johnston, a builder from Boston who designed green building programs for cities, taught us to "Only speak green to Green." He suggested that suburban parents would buy a green home much faster and pay much more if it was marketed as healthy for their children (ethnocentric Magenta or in Spiral Dynamics terms, Purple/Kin Spirits/Tribal) rather than saving on energy (Orange) or good for the planet (Green). Since all parents have a family-focused early developmental level embedded deep within them, appealing to the listening of what that level is attuned to listen for made sense. Our future task was to find ways to speak Integral to all the non-integral levels in ways they could hear, in ways they could find themselves and their values in the conversation.

4 Australia: All-quadrant Problems and Solutions

In 2018, we travelled to Deakin University in Geelong, Australia to lead ten workshops with faculty research teams at the School of Architecture and Built Environment.[20] The topic was "The Integral Research Approach"

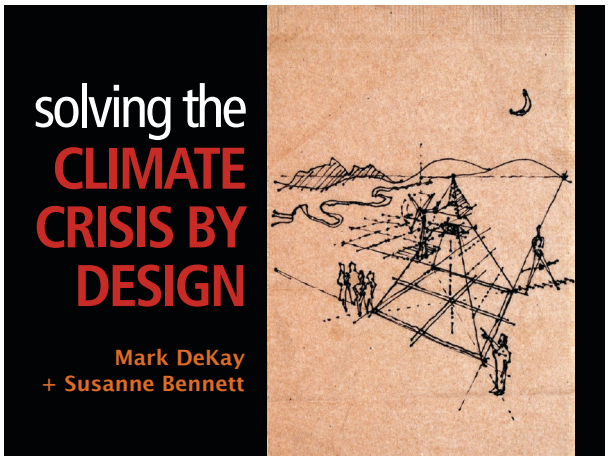


Fig. 13 Title slide from the Geelong presentation. Lectures are highly illustrated and choreographed

based on concepts in the *ISD* book. We were invited to give our climate talk at a monthly lecture series, "The Real Lectures."[21] The lecture was recorded and can be found on the Deakin Real Lectures YouTube channel.[22]

With an auditorium full of architecture students and faculty, the reception to the reworked talk was heartening, and we were back in our element. Somehow, by being willing to allow the talk to continually evolve, we were not only speaking to a receptive audience, but we were not throwing them into a catatonic state with all bad news. The presentation in Geelong allowed us to fully develop the all-quadrant rhythm of problem (bad news) and solution (good news) in architectural design terms (Fig. 14).

To be honest, we struggled to create an AQAL presentation, but given the predominantly collegiate audience, we opted for inspiring them about what could be done by designers. This meant spending less time with the theory of levels and introducing

20 A+BLOG, Deakin Univ. (2018). Dekay and Bennett Help Formulate IDF, May 23, blogs.deakin.edu.au/ab/2018/05/23/dekay-and-bennett-help-formulate-idf/

21 DeKay, Mark and Susanne Bennett (2018). Public Lecture, Solving the Climate Crisis by Design, Deakin University School of Architecture and Built Environment, March 20

22 DeKay, Mark and Susanne Bennett (2018). Public Lecture, Solving the Climate Crisis by Design, Deakin The Real Lectures, YouTube, youtube.com/watch?v=iC2cXbmDJhQ&feature=emb_title

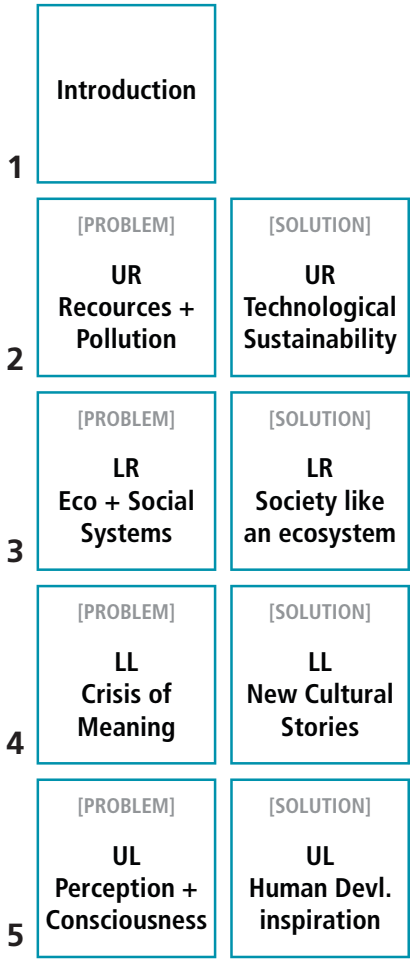


Fig. 14 Structure of the Geelong talk: Problems and solutions in four quadrants

the full integral AQAL complexity so that we could spend more time on the architectural ideas and patterns. Levels, then, became a tacit background from which we speak, framing the communication's message to the dominant Orange and Green audience, but with enough complexity that Teal can follow and appreciate the approach.

We had to come to terms with and accept the difficulty, if not the impossibility, of a full AQAL treatment of the climate change problem and its design solutions delivered to an audience that was not integrally-informed. Sometimes, because it is interesting to us, we want to share the insights that come from integral contemplation in all its exhilarating complexity. Yet, the truth has

Fig. 15 How does one integrally communicate in a world of fake news, no truth and climate deniers?

become evident that this is rarely the most effective communication option. Only speak integral to integral.

A wonderful question emerged from this audience: "Yes, we get it and we love knowing there are actions we can take to counteract climate change. But what about those people who still think it's not real, and don't understand the science?" (Figure 15). How, they asked, in a world where a US president can deny the reality of climate change, does one get clients and public officials to listen to what seem like obvious truths?

5 Back in the USA: Preaching to the Pre-rational

This question of how to communicate with Red and Amber science-denying or science non-understanding levels led us to the next chapter of our inquiry: How do we get through to all the various levels that exist in most settings in which we may be speaking?

When we gave or talk to students in the US, and, as we live in a conservative southern state, we realized that a not insignificant segment of the students were climate deniers. We needed to think through presentations to people who don't respond to statistics and who live in a post-truth world (Fig. 15).

Of course, *levels* is a very helpful tool here. We began to intentionally take the view of the pre-Orange, pre-rational levels, which value family, tribe, mythic story and authority, whose members can not be persuaded

by science, and who have very different worldviews about the nature of reality.

This turned out to be very personally expansive for us since, in order to truly get through to each level, we could not make these differing positions wrong. We had to bring forth respect. We had to embrace them as our own, as a valid step in everyone's developmental journey, which had something to offer. In going back to the original work done in that very first Integral Ecology and Sustainability workshop, we looked again at the original work from Barrett Brown on "Integral Communications."[23]

In developing a simplified levels-based approach (Figure 16), we typically reference Robert Kegan's "five orders of consciousness" as a example of the cognitive line, Carol

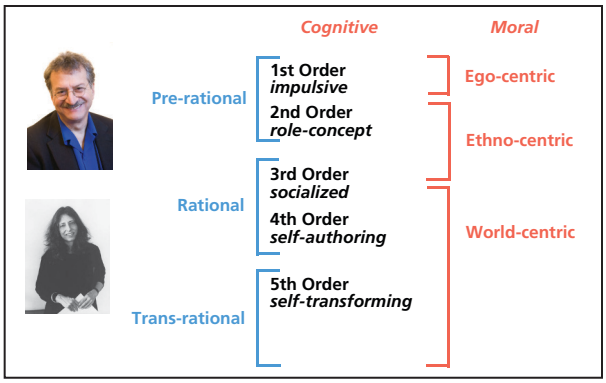


Fig. 16 Simplified system of levels from Pre-rational to Rational to Trans-rational used to develop climate change expressions

Messages and conversations about climate change have to be addressed to how each developmental stage hears the world.

Gilligan's relationships line stages (selfish to care to universal care) and Lawrence Kohlberg's moral line stages (pre-conventional to conventional to post-conventional).[24, 25, 26, 27] These are fairly easy for most college-educated people to grasp. We roughly align these and simply talk about four levels: pre-rational (Amber and pre-Amber levels), rational (Orange), late-rational (Green) and Post-rational (Teal/Integral). In our experience, academics are more willing to use language relating to a cognitive line than to a moral or values line, even though we tend to show them the correlation anyway.

We realized that we had been speaking from 4th order Rational cognitive stage about invisible future-based complex dynamic abstractions of systemic interactions explained with charts, graphs and statistics, and also that our speaking came from a World-centric moral stage. It seems clear that such messaging doesn't work very well with the 50-60% of America that operate from an ethnocentric or egocentric stage on the moral line, nor with the perhaps 25–30% of people in the US that have not moved out of the pre-rational cognitive stage.

It is important to be aware that many climate deniers can not be won over by rational arguments. A person at a pre-rational stage of cognitive development can not process high order rationality. Similarly, a person at an egocentric or ethnocentric stage of Moral development can not act in a

23 Brown, Barrett (2004). Integral Communications for Sustainability. Presentation at the Integral Ecology and Sustainability Conference, Integral Institute, Boulder, CO, Nov. 8-13

24 Kegan, Robert (1982) *The Evolving Self: Problem and Process in Human Development*, Harvard University Press, Cambridge

25 Kegan, Robert (1994) *In over Our Heads: The Mental Demands of Modern Life*, Harvard University Press, Cambridge

26 Gilligan, Carol (1982). *In a Different Voice: Psychological Theory and Women's Development.* Harvard Univ. press, Cambridge

27 Kohlberg, Lawrence (1981). *Essays on Moral Development, Vol. I: The Philosophy of Moral Development*. Harper & Row, San Francisco

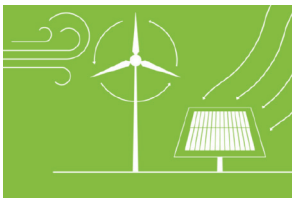
pre-RATIONAL

[problem]
There is no crisis.

[solution]
A call to stewardship

[healthy expressions]

- *Clean air is healthy air…Healthy air means a healthy community.*
- *We use the sun and wind on our land so we can be self-sufficient and take care of what God gave us.*
- *I'm glad to have my Church and the law both guiding me on the right things to do about this carbon thing.*



early-RATIONAL

[problem]
Crisis of resources and pollution

[solution]
We have the technology.

[healthy expressions]

- *Through efficient technologies, carbon-dioxide levels continue to be reduced.*
- *It has all paid off for me now. My solar power system has increased my property's value.*
- *We are managing our energy sources and environmental sinks to prosper now and in the future.*

late-RATIONAL

[problem]
Crisis of ecological and social systems + Crisis of meaning

[solution]
Zero carbon development + New cultural stories.

[healthy expressions]

- *Climate change has made me realize that I'm a part of the web of life; it matters what I do.*
- *Government, industry, community and nature are working together to solve these complex interconnected issues.*
- *Working to solve climate change and save the earth has brought our community together.*

trans-RATIONAL

[problem]
Crisis of perception and consciousness

[solution]
Human development

[healthy expressions]

- *Let us be protectors of creation, protectors of God's plan inscribed in nature, protectors of one another and of the environment. (Pope Francis).*
- *Things are getting better, things are getting worse.*
- *Each level of development has something important to help solve climate change.*

Fig. 17 Climate change as expressed form four stages: problem, solution and expressions

world-centric manner. The concrete, pre-rational mind *can not see climate change* or even imagine it. It does not exist as an issue. What's important is to recognize that these are natural stages in which many people simply get stuck—they are not bad people—and that messages and conversations about climate change have to be addressed to how each developmental stage hears the world.

Consciousness at the pre-rational stage can not see or take in phenomena described from a late rational cognitive stage. Essentially, there is no climate crisis because that horizon can not be seen, conceived or expressed. Graphs, statistics and formulas are meaningless. What counts in the pre-rational is first hand concrete experience, what respected authority has to say, and what one's group believes. Therefore, we started to take a look more at how climate change occurs from different cognitive stages. We began with getting to know the pre-rational.

Climate change speaking from 4 levels

We were able to develop speaking from our very own levels—ever-present in everyone. We began speaking from and messaging to what we call the Traditional/Pre-rational worldview, laying out the consequences of

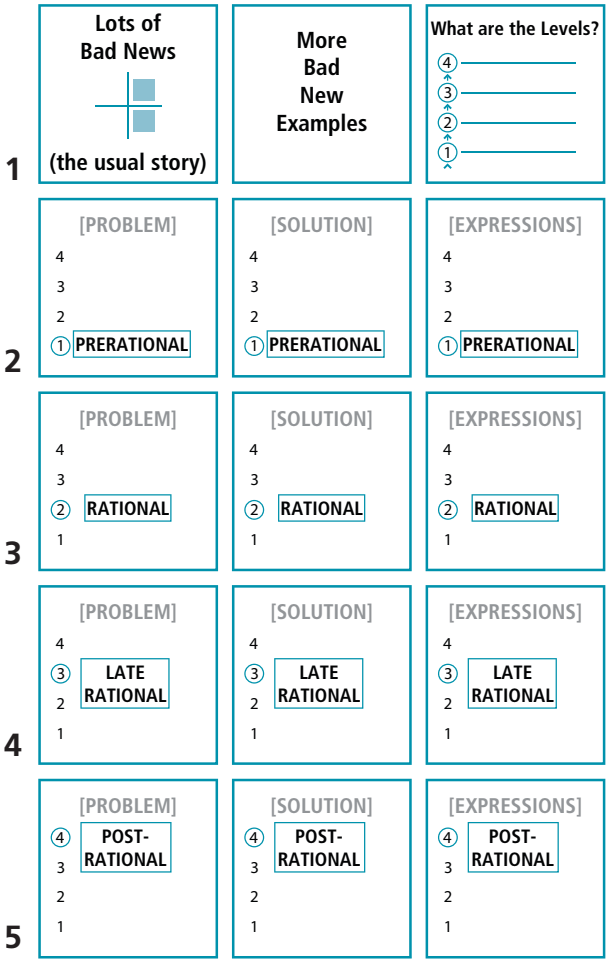


Fig. 18 Structure of the Montana SBSE talk: Problems, solutions and expressions at four stages of worldview

a changing climate based on *their* values. Each of our four levels—Pre-rational, Early Rational, Late Rational and Post-rational can be understood as viewing the climate change problem differently, as generating different kinds of solutions, and as speaking these different ideas with different words and use of language. Figure 17 shows how we developed this thinking in our presentation. You, the reader, will probably notice that, if you look at the pre-rational expressions, you don't take issue with someone else holding these positions. They are positive and healthy; one doesn't need to make them wrong.

This was a highly satisfying exercise for us; we were ready for the next opportunity, which was an invitation to give a presentation at a conference of the Society of Building Science Educators (SBSE) in Montana, with faculty members from around the world.[28] This is a group of architectural educators who focus on building technology and performance, energy, lighting and acoustics.[29] Architectural education suffers from classic reductions to individual quadrants. The typical SBSE member takes a science and engineering-oriented UR approach that values performance. This can also be supplemented by a LR systems ecological design thinking. Other groups of faculty in American schools often focus on UL experiential or LL cultural approaches. This schism manifests as internal culture wars and competition for the minds of students. An old joke in the SBSE pits the "light side" building scientist as "Lone Ranger" or as a light-sabre-wielding "Jedi warrior" against the "dark side" proponents of left-quadrants perspectives academics driven by interest in meaning, poetics, theory and aesthetics. It can be a lonely intellectual territory to fight for Orange values and UR scientific methods and knowledge in the context of a Green pluralistic dominated academia in which, in its common yet extreme version gives all perspectives and opinions equal value and therefore no value, plunging all into a swamp of nihilism. As a result, it is easy for a building scientist to feel dejected, like they are a Don Quixote figure "tilting at windmills."

We presented our newly developed "levels speaking" as a potential way for them to break through to a new listening and a

28 DeKay, Mark and Susanne Bennett (2019). Lecture: Preaching to the Pre-rational: the politics of communicating climate change, *Society of Building Science Educators Summer Meeting,* SBSE 2019, Frontiers: Teaching Building Science in the 21st Century, Lima, MT, July 22–25

29 Society of Building Science Educators (SBSE), Retreat 2019, sbse.org/retreats/sbse-retreat-2019

new, perhaps more effective, speaking. The structure of that talk is shown in Figure 18. This turned out to be as revelatory and exciting to this group as it had been to us and spurred deeper and deeper conversations throughout the conference. Not only did this energize the group, but it returned them to some modicum of hope—something many had lost after years of failing to see the hoped-for dramatic changes in education and the profession. These educators do truly appreciate new tools, and this was one they could add to their toolbox.

Translations to the Pre-rational

As a way to make the point about the misfit between how the scientific perspective speaks about climate change and how regular pre-Orange citizens might either express or be able to hear the same message, we experimented with translating some actual statements to a more traditional worldview friendly language. Here are some examples:

- **Climate Change Statement:**

Kids face unique health burdens because of climate change, including the broad effects of weather disasters, exacerbated allergic and asthmatic diseases, food and water insecurity, and heat-related deaths.

—American Academy of Paediatricians

Translation to the pre-rational:

If you have children, or your neighbours have children – or your relatives – we know that these children have more asthma and allergy illnesses than their parents – because they are breathing dirty air. America is getting sicker and weaker and the health system cannot keep up. Some of these children won't make it.

- **Climate Change Statement:**

Eighty percent of the world's crops are rain-fed, so most farmers depend on the predictable weather agriculture has adapted to in order to produce their crops. However, climate change is altering rainfall patterns around the world. —Columbia University Earth Institute

Translation to the pre-rational:

Farmers can no longer depend on rain–some fields are deserts and some have become lakes. They can't make a living and their families suffer. Not only that but their life's contribution, that which makes them fulfilled, which is to feed people, is taken away. Now everyone's food is threatened. Who suffers the most when food gets expensive? The poor. Aren't we called to care for the poor?

- **Climate Change Statements:**

Humans have increased atmospheric CO2 concentration by more than a third since the Industrial Revolution began. This is the most important long-lived "forcing" of climate change.

—US National Aeronautics and Space Administration (NASA)

Global CO2 emissions from human activity have increased by over 400% since 1950. As a result, the concentration of CO2 in the air has reached more than 400 parts per million by volume (ppm), compared to about 280 ppm in 1750 (around the start of the Industrial Revolution).

—US National Oceanic and Atmospheric Administration (NOAA)

Translation to the pre-rational:

Ever since the Declaration of Independence, we have changed from burning wood to burning coal, gas and oil. And you know when we do that it makes exhaust and soot. And all that exhaust and soot in the air is building up year after year. More and more. More people. More burning. More cars. More driving. More planes, More factories. More air conditioning. More power plants spewing. Think of all that soot and all that exhaust. It's like a big down blanket over the earth. A blanket where the sun can come in but heat can't get out,

So, almost 250 years after independence, its already 2 degrees (F) hotter. And that may not seem like much, but it creating' a real mess with today's weather, and the folks who study this are sure it's going to get worse. It hasn't been this hot since way before Moses led the Israelites to the promised land and even before the first humans ever set foot on North America. Before the dawn of civilization.

Just like we had to gear up during WW2, when

> everybody had a job and everybody had a mission, we have to pull together to save the country again, to make the world safe and healthy again for our families and our grandchildren.

These examples make clear that the authoritative voices on climate change commonly use a scientific UR rational level language or late rational complex systems logic to describe the important dynamic environmental phenomena of global climate change, atmospheric systems chemistry, thermodynamics, and climate and weather systems. These messages are poorly received at best by Red and Amber consciousness and values who both use different logic levels and are attuned to different languaging. In this regard, such communications can easily be interpreted as "elite" of as "talking down" to those not initiated into the distinctions and horizons available only to late rational cognition and beyond. Green values and late-rational complex science perspectives are "talking over" the heads of their audience. Kegan used the phrase "in over our heads" to describe the complexity of a postmodern (Green) world requiring "4th Order" consciousness that can not be accurately comprehended or effectively navigated by pre-green 2nd and 3rd order minds.[30]

6 Positioning the Work

Our approach to solving the climate crisis by design comes out of our work with *Integral Sustainable Design: transformative perspectives.* In the book, and many papers and classes, we explore what the topic looks like from an all-quadrant, all-level (AQAL) view of 16 projects (Kosmic addresses). Architecture itself, by nature, is one of the most integral of disciplines; its practice simply requires all quadrants. As a practice and as research about the practice, mixed methods are required to approach anything like a holistic understanding of it as such a complex artefact. Their synthesis in practice is something quite unique and original to the discipline.

Our audience for explaining in public lectures the climate crisis and what architects and the building community can do about it is never "integral"; that is, the audience is multilevelled and the integral level is never (so far) the dominant one. We use multiple integrally-informed framings, but most often "underneath" and not necessarily explicit. The delivery has become an interwoven AQAL messaging to an always-mixed live audience. In terms of Wilber's Integral Methodological Pluralism (IMP), the content is integrally structured, but the jargon of integral theory is not forwarded. We engage methods from the inside and the outside of the left quadrants and primarily the outside of the right quadrants.[31]

The audience is multilevelled. Integral has never been the dominant level in any room.

Delivery as an integral embodiment

In developing, delivering and refining our presentations on climate change and design, we are actively "reflecting-in-action," as Donald Schön describes it.[32] He defines reflective practice as how professionals through their actions know their knowledge

30 Kegan, Robert (1994). *In Over Our Heads: The Mental Demands of Modern Life.* Harvard Univ. Press, Cambridge.

31 Wilber, Ken (2006). Integral Methodological Pluralism, Chapter 1 in *Integral Spirituality,* Integral Books, Boston, p33–49

32 Schön, Donald (1983). *The Reflective Practitioner: How Professionals Think in Action*. Basic Books

base as more than they can explain in words and how they learn from their experience. "Knowing-in-action" is the process of engaging with one's full person, including one's tacit knowledge. Design itself he thinks of as a "conversation with the situation." This is in contrast to the application of technical rationality to solve problems. Instead, design navigates a fuzzy realm in which defining the situation, and solving for it are co-defining and co-emerging in time and in process.

In this regard, we deliver a presentation as an integral practice, as an enactment of who we want to be being in relationship to the audience. We wish to convey both confidence, as climate change has reality for us, while also being aware and sensitive to whether the message is landing powerfully with the listener. Reflecting-in-action allows us to create and respond to what is happening in the room, to move up or down the levels in choosing the complexity of concepts and in how we language their delivery.

Additionally, reflection-in-action can be the combined with "reflection-on-action," which is awareness turned to reflection on what has already happened. That longer perspective when involving more than one individual is what the emergent learning tools are great for. Reflecting-in-action, we could respond to the Beirut psychological trauma of overwhelming bad news and to the Green audience upset with hierarchy in Edinburgh. Using emergent learning, we could course-correct between events by giving the good news equal time and establishing a more bite-sized rhythm. With emergent learning, we could also continually improve each presentation as a new creation in a new context, such as by addressing the need for building scientists to find a positive language to communicate with the pre-rational segment of audiences.

Scoping the next audience

In each new venue, we also adjust to the LR context of environmental issues, such as the long drought in the Middle East, snow pack loss in the North American West, and fires in Australia. Each audience can be different, have varying depth of background knowledge of the issues (speaking to mostly a student audience vs. a rooms full of technical professors). Audiences can be marked by different LL cultural backgrounds and dominant worldviews (speaking to a conservative church group vs. speaking to a progressive environmental organization). In each case, we get to know the place and the audience as much as possible before refining the presentation. We work to find relevant contextual examples of climate change problems and good regional solutions, such as architectural examples. We imagine and predict as best we can who will be in the audience and what messaging will best, as Werner Erhard often phrased it, "speak to their listening."

A presentation is an integral practice, as an enactment of who we want to be being in relationship to the audience.

An example of the opposite

Contrast this audience researched approach to one of Mark's lecture failures. He was once asked to present on the topic of green infrastructure to a convention of arborists, whom the talent recruiter described as "mostly urban foresters." He assumed that the audience would be educated professionals with masters degrees who managed the whole tree cover for cities. Just having completed two large urban green infrastructure projects and meeting knowledgeable urban

foresters in Chattanooga and Knoxville, he was excited to share the integral framing of urban design and development that incorporated green infrastructure. As it turned out, the arborists were mostly blue-collar men who climbed trees with chainsaws as "tree surgeons" or rode in the cherry picker basket of a bucket truck on the maintenance crews. They knew a lot about urban trees, but Mark's presentation using the explicit integral theory content, complex LR messaging and academic delivery just did not land. It fell like a dead tree! The room became glazed over and disinterested. There had been no real accurate scoping of the potential audience. To make it worse, Mark could see that the fit between arborist audience and presentation was all wrong—and going down in flames like dry forest in a wildfire—but in the moment he could not seem to reflect-in-action. They were in town to get their continuing education credits and sat respectfully, if painfully, through what was undoubtedly an irrelevant presentation for them. It was a striking lesson about what a lack of contextual homework and integral embodiment as a speaker can yield.

We learned a striking lesson about what a lack of contextual homework and integral embodiment as a speaker can yield.

We can attest to the power of using the integral AQAL model to inform who we are being while speaking and to prepare for who we will be communicating with.

7 Summary of what we learned

We have learned a lot over a few years of offering these presentations on "Solving the Climate Crisis by Design" in multiple countries to diverse audiences. Here are a few thing that we hope the reader finds useful and transferable to other topics and audiences.

• Integral opens thinking.

Both climate change and architecture are complex phenomena. Using quadrants and levels to unpack the knotted ideas of both is eye-opening for us and for the audience. In the building community, climate change is thought of in terms of fossil fuel use and its solution is most often considered as UR technical. Climate change and its solutions are a problem of performance. This is true, yet it does not address root causes or the qualitative impacts of architecture. For these, architects need the wisdom revealed from each quadrant, so that one can understand the importance of worldview and the meaning given to nature, the cultural narratives about climate change and about the kind of design-with-nature that follows in response to those varying ideas. Some of these LL narratives were explored in one of Mark's papers from IEC 2018.[33]

Similarly, the cognitive and values lines of individuals, emphasized in UL integral theory mapping, reveal that conventional Al Gore style complex scientific explanations are doomed to failure at authentic communication with many in an audience.

• Inspire with a why.

Simon Sinek, a popular author and management consultant suggests that each endeavour worth doing "starts with why."[34]

33 Mark (2018). Designing Relationships to Nature: five kinds of stories and five kinds of connection, *Integral European Conference*, May 22–27, Siófok, Hungary. Best [Creative] Academic Paper Award

34 Sinek, Simon (2011). *Start with Why: How Great Leaders Inspire Everyone to Take Action*. Penguin, New York

In a postmodern contemporary world of nihilism and narcissism, as Wilber explains, students and professionals alike can easily get mired in the cultural messages of meaninglessness in the face of climate change: "yes, climate change is happening, so what?"[35] An intense narcissism is easy to manifest in a field already driven by high level rewards for egotism and the myth of "starchitecture." It seems that, inside themselves, our audiences crave meaning and purpose. Nihilism and narcissism are only temporarily satisfying. In our experience one thing that almost all people want is the opportunity to be a contribution, whether to their family, tribe, business, to history, country, or to the planet. People need and want to be told again that they can believe in something larger, that their actions do make a difference and that this is a critically important time for engaging.

In our experience one thing that almost all people want is the opportunity to be a contribution, to make a difference.

• ***Give something up on yourself.***

Integral thinking promotes developing one's self-awareness and an increasing dis-identification with the ego. We know that who we are is not how we have succeeded or failed, not what we do or what we say. In this sense, we can be free to as we like to say, "give one up on yourself." One can't simply be the hero in the concluding act; there have to be real challenges and overcoming those challenges in such a way that the audience can identify with the speaker. Since we are not perfect and make mistakes all the time, it is easy to find a way that we have failed and learned from that failure, such as when we overwhelmed the Beirut audience with bad news or when Mark missed the mark with the Arborists. A little humility as a way of being in front of the room is as important as any particular content in the message.

• ***Presentation is a conscious practice.***

Practicing is not to become perfect, rather practice in this sense is like a yoga practice in which one becomes attuned to whatever is arising in the field of one's awareness. Practice is to find the edge of workability, to push to the zone of maximum benefit but not too far. We always set a clear intention before each presentation and then ask ourselves, "Who do we need to be being in front of the room to manifest that intention?" One way we have to be is to reflect-in- action.

• ***Loving who is in the room.***

One of the ways we have to be in order to fulfill our intentions is to bring forth as much love and respect as possible for everyone in the room. Have you ever noticed that people are enrolled and interested when they know that someone is lovingly interested in them and attempting to connect? Framing any topic integrally engages complex Teal level cognition. Its easy, even when one tries hard, to sound elitist or too intellectual, to come off as condescending. Susanne often tells Mark, "You can say almost anything to me if it is said out of a place of love." There is truth to this in our experience. It is the honey that makes the medicine of solving the climate crisis palatable.

• ***Too much bad news activates a collective shadow.***

One thing we learned is that too much bad news about climate change all at once can

35 Wilber, Ken (2017).*Trump and a Post-Truth World*. Shambhala, Boulder

overwhelm people. It's a confront with our collective shadow that has been avoiding the problem in order to avoid the negative feelings. It can't be left out. People have to be confronted with the bad news, with the reality of the magnitude and the rapidity of climate change and its awful consequences. Yet, one has to tread carefully and in waves, much like telling someone that a loved one has died.

• ***Only speak Integral to Integral.***

Integral is complicated. Using integral theory in explicit ways requires an audience primed by their integral cognitive (Kegan's 5th order, self-transforming consciousness). Short of this people only get confused and frustrated. Except in rare venues, integrally-informed moderation is recommended.

We woke up to the pre-rational, egocentric and ethnocentric levels that are present in any audience and embedded in each of us.

One can use integral framings as the substructure of presenting various ideas without ever mentioning quadrants, levels, line, states and types or especially (!) integral methodological pluralism.

Even Green world-centric values and Orange rational science miss the opportunity to enroll the Red and Amber pre-rational level in a cause that requires all people at all levels in all places to take action. We woke up to the pre-rational, egocentric and ethnocentric levels that are present in any audience and embedded in each of us.

Mine the pre-rational values. Earlier levels are more fundamental and constitute the elemental human condition. In healthy development each level is transcended and included. Everybody has older value and cognitive levels within. All want family to survive, to have enough to eat, to have clean air and water. To ignore the value of the pre-rational is to miss the opportunity for the widest impact that speaks to the most people in any room.

• ***A multilevel message is needed.***

The basic principle begins with honouring and embracing who is in the room and what their own way of thinking and being in the world has to offer in terms of solutions. Enacting the principle means to be aware of how each idea in a talk represents a particular Kosmic address as a combination of quadrant and level. In taking the perspective that generates the ideas, one can also craft the message such that people listening from different levels can hear. One can't always speak from every Kosmic address, for example, from the 16 Prospects of *Integral Sustainable Design*. A good integrally-informed presentation will, however, be designed by weaving messages and speaking language that Traditional/ pre-rational, Modern/ rational and Postmodern/ late-rational levels will recognize. It is a tall order and one that we are still working to perfect. For each major variety of audience member, imagine that they say to themselves, "Maybe I don't get all of what they are saying but this part really makes sense to me." As a speaker, the terms of engagement are that of one's community and audience, not of one's own expertise or personal preference.

Susanne Bennett and Mark DeKay

Knoxville, 2020

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