



## DRAFT Framework for Broto Collaboration

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## DRAFT Framework for Broto Collaboration

### 1. Introduction

Provincetown, Broto's HQ in Massachusetts, is steeped in 400 years of colonial history – much of it as a once-vital fishing community of Portuguese immigrants undermined by increasingly severe climate and the negative impacts of human enterprise (ocean acidification and a collapsed fishery). Broto is a word from Portuguese for sprout – as in a seedling emerging from a seed, full of potential and life. This is a synthesis of ideas as part of a new whole idea that:

*Broto can reflect a community and a global challenge in something that has potential for new life.*

As a starting point, we see rich partnerships in consumer-minded industry like smart phones where art and science blend to iterate and innovate and appeal to the mainstream through product design. As strategy, corporate industry benefits from inter-departmental cooperation, synergies and other innovations that might be gained through the potential of synthesis, or multidisciplinary or interdisciplinary projects or cross-silo communication.

With that kind of existing collaboration track record, how does our Broto model borrow from that success to focus on meaningful, dialectical co-creation that seeks new ideas, new conversations, new paths toward new discovery of solutions for pressing environmental challenges such as climate change, and ultimately, a sustainable future?

This document is a preliminary draft to capture the ideas that might comprise a *Broto Collaboration Blueprint*. Nominally, this Blueprint comprises our “rules for engagement” through a collective agreement in just one approach to art-science collaboration -- especially as it is directed at climate change.

We're working, for discussion, with this definition:

*“Collaboration is the substantive knitting together of disparate processes, ideas, and contexts toward the goal of new discovery.”*

This document stipulates that art-science collaboration – that is, collaborations between artists and scientists – *can* spark innovation. It does not rehash the many established reasons artists and scientists *should* collaborate, but focuses on the *how* they might best collaborate. Also, it stipulates that existing science and art initiatives already engaged in exploring aspects of climate change are valid, that the challenge of climate change is real, and that global civilization is contributing to or accelerating the negative impacts of climate change. These are givens.

Importantly, it acknowledges the many existing models for collaboration and seeks to provide additional context in collaboration space. Progenitors <sup>1 2 3 4</sup> of art-science collaboration have

<sup>1</sup> Leonardo: <https://www.leonardo.info/about>

<sup>2</sup> Art & Science Collaborations, Inc.: <http://www.asci.org>

<sup>3</sup> SciArt Center: <https://www.sciartcenter.org>

<sup>4</sup> AS-IF: <https://asif.center>

been working in collaboration spaces for decades -- to our benefit and with our gratitude. The Broto framework is meant to expand that work, build on that expertise, and reexamine some of their important conversations.

This framework also brings in an active third party: Observer. This role is a key component in documenting the process and results of the collaboration, providing context and support for the collaboration, and reducing, to a large degree, the expectation that the artist carry the burden of science communication to the mainstream.

This initial outline minimizes the art-sci collaboration backstory and overall theory -- again nodding to the work already done. Rather, it outlines the Broto intention.

And, lastly, about document creation methodology -- this is about building on existing thinking in the art-sci and collaboration spaces. It's about a synthesis of observations and a focus on content management. If citations are lacking, we'll make the corrections in a final draft.

Comments, dissent, constructive criticism, corrections and other input is welcome as we development this framework for the best possible advantage.

## 2) Cooperative Agreement

*“Collaborations between artists and scientists can be so much more than just good science communication. These partnerships also may change and enrich the way we do both science and art.”*

*– Art/Science Collaborations: New Explorations of Ecological Systems, Values, and their Feedbacks, Ellison et al, April 2018<sup>5</sup>*

At the core of this framework is a declaration of cooperative agreement. Individuals, experts, groups, and others who enter into this kind of framework agree to a set of standards, codes of conduct, expectations of professional performance, and communication. There is a lot of scholarship on this already<sup>6 7 8</sup> and this document is not going to outline the specifics of already good guidance.

If there is a Broto “rider” to the existing idea of an agreement, it's this:

*Broto's cooperative agreement is, on its own, a goal of the exercise –with the benefits of a substantive, mutual, real-time, and credible collaboration unearthing innovation, aspiration, and results over time that might not have emerged without this content-driven, shared process.*

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<sup>5</sup> <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/bes2.1384>

<sup>6</sup> The Toolbox Project: <http://toolbox-project.org>

<sup>7</sup> Collaboration for Impact: <http://www.collaborationforimpact.com/the-how-to-guide/>

<sup>8</sup> Julian Ruddock link to come

By agreement, we mean a shared commitment to do the work in a shared way with a shared process and shared credit. While that may seem obvious, the whole idea pivots on a shared process and asks that participants enter into the projects open to the issues of trust, control, communication and accountability that come from close relationships.

### 3) The Drivers/Aims/Vision Behind the Broto Initiative

- To create an arena where co-creation can flourish
- To outline guidelines for collaboration execution that uphold the highest levels of science and art integrity, along with documentation
- To build in observation, transparency, and mainstream relevancy
- To aspire to be mutual, credible, real-time and substantive
- To commit to being creative, lateral, big and disciplined explorers of new territory
- To consider "third terms" that may be neither art nor science.

In this last point – *third terms* – earlier thinking is a motivator. Notably, British scientist and novelist C. P. Snow called it, in 1959, a *Third Culture*<sup>9</sup>. We might also take some inspiration from the 2003 manifesto *The Third Paradise* by Michelangelo Pistoletto.<sup>10</sup>

Absent from our goals are specific outcomes or work product. This doesn't mean we don't want results, but rather those results of these collaboration agreements can take their time.

Lastly, for discussion, we might acknowledge the duality of this document's objectives:

- To encourage collaboration in which collaborators inform each others' processes
- To tackle elements of climate change to encourage more mainstream urgency.

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<sup>9</sup> <http://m.s-f-walker.org.uk/pubsebooks/2cultures/Rede-lecture-2-cultures.pdf>

<sup>10</sup> <http://www.pistoletto.it/eng/crono26.htm>

#### 4) Broto Framework Aspirations/Traps

Facing the push/pulls of the framework:

<p><b>Mutual:</b> The artist and scientist participate fairly (if not equally) in the collaboration, with respect and openness, throughout the collaboration process. Mutuality means exactly that: how does the collaboration help each partner exceed expectations, push boundaries and innovate toward the goal of understanding climate change?</p>	<p><b>Respect for past work:</b> None of this work is designed to negate or dismiss another approach. Rather we invite refinements based on art-sci experience and we are creating an arena where all perspectives can be tested.</p>
<p><b>Real-Time:</b> The collaborators work concurrently and with frequent two-way communication. Information and analysis is shared throughout the collaboration period — meaning that the scientist and artist engage in their processes with overlapping tasks and insights and “as-it-happens” timeliness.</p>	<p><b>Credit/Citations:</b> Collaboration and shared work brings up the thorny issues of credit, ownership and citations. Broto is committed to ensuring the work is properly credited and the co-authorship is fairly represented.</p>
<p><b>Substantive:</b> In innovation, content is driving the inspiration, analysis and outcomes. Substance means the highest quality science findings and the highest level of artist interpretation coming together for new insights. We want to embrace the brainiest of concepts that come from a shared commitment to content.</p>	<p><b>Scrutiny/Integrity:</b> Is the work defensible? Are collaborators risking reputation by engaging in this kind of exercise? Can the work product stand up to scrutiny? We don't know the answers – it will depend project to project – but those kinds of questions help to keep the projects in line with professional and industry norms and expectations. We want the scrutiny and we want work that can defend itself.</p>
<p><b>Credible:</b> For these collaborations to resonate with the most skeptical of stakeholders, we need to uphold credibility: Science and Art created with the highest levels of integrity, that can be defended, replicated and explored as serious contributions to the greater debate about, in this case, anthropogenic climate change.</p>	<p><b>Interference:</b> This is a project that, necessarily, asks participants to be open to alternative perspectives that may or may not impact how they do their work.</p>

## 5) Broto Framework Players

A key aspect of the Broto model is that it is non-binary and there are, in fact, three key players in the collaboration.

At a minimum, the collaboration group comprises an artist, a scientist and an observer working toward a defined scope of work over a prescribed time period.

The actual configurations will depend on the teams – perhaps, as one example, more than one artist will work with a science department and a single observer.

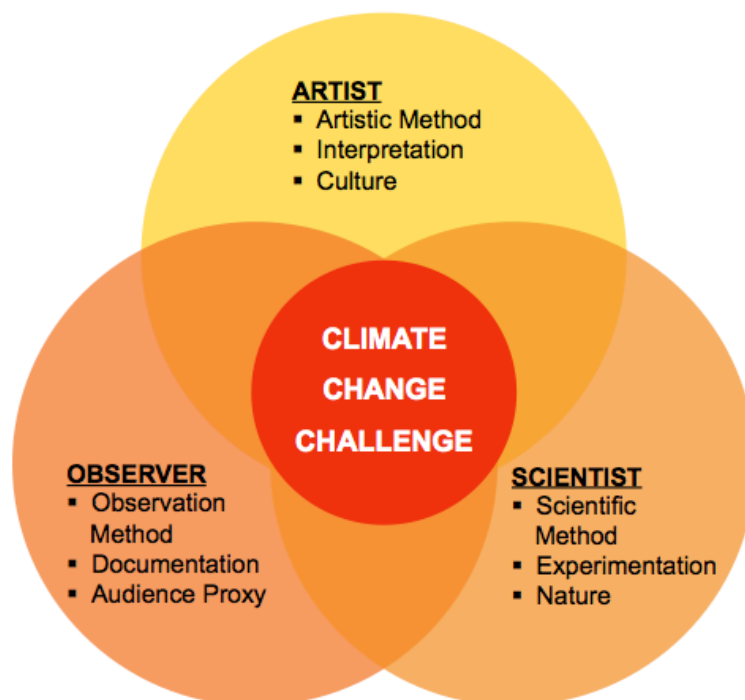
Also, as background, Broto conducted independent market research in February 2018 to survey opinions of artists and, separately, scientists in cloned surveys. The findings are published on broto.eco<sup>11 12 13 14 15</sup>.

The results suggest that notions that artists and scientists are not so dissimilar, might have some merit in fact.

For instance, “Scope of work” in the future collaboration project topped findings in both surveys, along with “chemistry with the collaborator” and level of “communication”. For both artists and scientists, good work and a good working relationship is key to considering a future collaboration proposal.

On the whole, artists are statistically more optimistic about art-science collaborations than scientists and indicate a greater likelihood of doing collaboration than their science counterparts.

Notably, each group thought the equivalent partner in the collaboration benefited most. Art-science collaborations are “good for the scientist” topped options in the artists’ list and art-science collaborations are “good for the artist” topped the scientists’ list.



<sup>11</sup> <https://broto.eco/2018/03/22/why-do-what-they-do/>

<sup>12</sup> <https://broto.eco/2018/03/22/scope-of-work-inspires-collaboration/>

<sup>13</sup> <https://broto.eco/2018/03/22/mainstream-audience-misunderstands/>

<sup>14</sup> <https://broto.eco/2018/03/22/roles-different-complementary/>

<sup>15</sup> <https://broto.eco/2018/03/22/mismatched-key-assumptions/>

One key finding in this line of inquiry was the groups’ relative ranking of the statement “art-science collaborations are ‘credible’”. In a mismatch that might need management in a potential collaboration, artists think art-science collaborations are more credible than scientists do.

Artist	Scientist	Observer
<ul style="list-style-type: none"> <li>• <b>Artistic Method</b> – however that is determined or executed by the artist or artists.</li> <li>• Any field of artistic endeavor with a special focus on climate change</li> <li>• Interpretation</li> <li>• Culture</li> <li>• “Artist as researcher”</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Scientific Method</b> – as prescribed in credible, peer-reviewed science exploration</li> <li>• Any field of science with a special focus on climate change</li> <li>• Experimentation</li> <li>• Nature</li> <li>• “Scientist as provocateur”</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Observation Method</b> – as suggested by an array of roles such as, but not limited to, sociology, anthropology, journalism, philosophy and other professions</li> <li>• Documentation</li> <li>• Audience Proxy</li> <li>• “Observer as sounding board”</li> </ul>

The role of the Observer needs more explanation and his/her/their role needs to be fully functional. The Broto model adds the role of facilitator (or observer) to help build bridges, enhance communication both inside the collaboration team and externally, and translate ideas, goals, and context. Primarily this is the role of documentation, relevance and mainstream connection -- in a way that takes that burden away from the artist and gives it specific function. Who? Among those who could focus on this role: Culture critics, philosophers, art historians, social scientists like ethnographers, theologians, journalists, poets or others who are prepared to connect that work to the larger world.

## 6) The Broto Playground: What lies between art and science?

Early in the conceptual development of the Broto framework, imagination was put toward the frontier of “rich, untapped territory that lies between art and science.”

The voyage to that frontier is driven by a belief that it’s achievable – like all great human experiments. Humans got us into this climate mess. Humans (hopefully) will get us out of it. Maybe, it will come from a collaboration of art and science.

If we can posit viable human settlement on a planet that is unfriendly to humankind, why is it that we struggle to posit long-term human settlement on this planet where we evolved?

This Broto framework seeks to maintain the independent integrity of both the artistic and scientific methods, however the collaborators define those methods in their professions. Our framework seeks to be “integrative” and “lateral” in bridging any real or perceived art-sci divide in ways designed to foster a sharing of information, perspective and interpretation.

Conceptually, there is territory between art and science that may be neither one, nor the other. It might be a *Third Culture*<sup>16</sup>.

In our development, so far, this has brought to light limitations in trying to define either an art method or a science method. Efforts to illustrate this through traditional flow charts fall short in capturing the way the collaborators work. Common themes among the processes of artists and scientists developing and executing work might include observation, experimentation, revision, evaluation, and/or analysis.

A primary challenge is, consequently, defining the exploration area and the credible way to engage art and science as tools toward that third idea, while acknowledging the obstacles of methods, time, budgets and personalities.

What is an appropriate way to illustrate this kind of collaboration that fairly represents all parties and the potential? The checks and balances are about ensuring "substance", "mutuality", "credibility" and "real-time shared work."

## 7) Broto Model Overview:

The Broto Collaboration Blueprint has been created to provide a functional guide for artists, scientists, and observers to blend their individual skill sets, experience and perspectives toward an exploration of co-discovery – pointed at climate change innovation.

- There are phases – discreet steps that are about integration, co-creation, analysis and communication
- There is a trio of active collaborator roles – artists, scientists and observers, with an engaged, overlapping or compatible relationship to the climate change challenge
- There is evaluation – both during the developing phases and as a way to determine impacts that are decidedly more about process than actual outcomes
- There are long-horizons and timelines – meaning that Broto is about putting ideas on a path toward a benefit that might accrue many years from now<sup>17 18</sup>
- There are near-term gains – new questions, better lines of inquiry, new mainstream relevance
- There are consensus-built standards – credibility check lists, disciplined communication and transparency, shared work minimums
- There is substance, mutuality, credibility and real-time co-creation.

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<sup>16</sup> <http://m.s-f-walker.org.uk/pubsebooks/2cultures/Rede-lecture-2-cultures.pdf>

<sup>17</sup> The Long Now Foundation: <http://longnow.org>

<sup>18</sup> Longpath: <https://www.longpath.org>



## **By Four Phases:**

### **Integration/Conversation**

This first phase is designed to create a common language, establish common ground, and define a common objective that provides the foundation for mutuality in the shared work.

A helpful glossary “living document” resource comes from Art + Science in the Field: AS IF <sup>19</sup>.

The Blueprint works to ensure respect among the various collaboration partners and continuous, accessible intra-team communication to share insights, data, questions, analysis and evaluations among the various aspects of the shared work. The integration phase engages language-building exercises, discussions about method and visioning exercise to align objectives – before the actual co-creation begins.

- Communication
- Bridge building
- Method
- Language/Jargon

### **Co-creation/Hybridization**

This second phase comprises the shared project intention defined by a shared scope of work. What is the scope of work that forms the foundation of the collaboration? What research/examination is shared, what is consulted and what is done independently of the collaborator partners? A blended approach means active consultation and sharing of creativity, exploration and developments as the collaborator partners pursue their own high-integrity methods. The Broto Collaboration Blueprint seeks ways to make that co-created work a priority – inspired by, but distinct from, other methods.

- Scope of Work
- Shared work
- Consulted work
- Independent work
- Data, insights, process, refinements
- Credibility, accountability, proof



<sup>19</sup> <https://asif.center/home/what-we-do/art-science-matchmaking/glossary-for-artists-and-scientists/>

### **Synthesis/Analysis**

This third phase is focused on collecting the insights, outcomes or results. new process insights or actual hard outcomes. What preliminary insights? Particularly, in what specific ways has the art informed the science and the science informed the art? Rather than focusing on actual art and actual science, we're focusing on process improvements, new ideas, blended perspectives and new lines of inquiry. What can we say with certainty from this shared work? As with the rest of the model, there will be some blended analysis, produced by the collaboration teams, but also room for independent analysis as part of the artistic and scientific methods. There may also be applied analysis from other third parties.

- Blended insights
- Shared analysis
- Independent analysis
- Third-party review, critiques, context
- Credibility, accountability, proof

### **Communication/Outreach**

This fourth phase is dedicated to making the work public – in all the relevant channels appropriate to disseminating the findings and in whatever media evolves from the collaboration. Again, some work will be co-credited, while other work can be produced independently. This phase, depending on the collaboration, relies on the Observer to produce the science communication, informed by the shared work.

- Co-credited work product
- Cited independent work product
- Published/Exhibited/Narrated/Annotated
- Credibility, accountability, proof

### **By Priorities:**

#### **Method is a common language.**

Broto, in its early development, observed a mismatch among artists and scientists engaged in collaboration, specifically, in jargon and academic pedigrees. However, a discussion in how they work, and why, seems to provide a more level field. Even for artists with no art process, this is a place to begin building bridges with non-artists. Does conceptualization/concept for an artist equate to theory/hypothesis for a scientist? How does the execution of science mirror the execution of art? Broto has a "scope of work" document that explores the ways in which collaborators like to work as a Phase 1 exercise.

#### **Shared intention is necessary through line of any scope of work.**

This is more of a declaration and a commitment that work will be shared and built together -- and an antidote to the traditional top-down, sequential science-to-art data swap. Broto collaborators accept the ideas of professional integrity, mutual respect, disciplined communication and commitment to the shared work and can be evaluated for their contributions in these terms.

**Third-party observation makes this non-binary.**

Art and science can be groups of artists and scientists in collaboration, but in our model we have a third player to be an "audience proxy". A journalist, philosopher, sociologist, etc. As a content challenge, climate change seems to lack urgency and context/relevance and communication. That's the observer role: To document relevance.

**Process IS the outcome.**

Too often the artist is unfairly burdened with producing the outcome for this kind of work. While we want solutions, they will evolve from long-term build outs of ideas that come from more innovative process. If we focus on maximizing the expertise and insights of the collaborators without the burden of outcome, does that result in a different sense of work product? Something that might be a new idea, or a new path? Something that might be neither art nor science? Creativity is encouraged in addressing the challenge of collaboration and how disparate collaborators might co-create.

**Blended method explores what lies between art and science.**

If we preserve the integrity of both art and science methods as sacrosanct, then how do we look laterally at ways one might better inform that other? Words like "integrative" and "lateral" help to express more expansively the question "how else we might think of this?"

**Feedback is encouraged/Reporting is required**

Reactions, dissent, commentary, suggestions and other feedback are part of the Broto journey early in the model in the way the collaborators relate to each other and their work and, later, when the mainstream audiences are presented with the new ideas and results of co-creation. Beyond the standard expectations of reporting in either the Art and/or Scientific Methods, Broto is focused on documentation – the multiple Broto phases, the regular collaborator updates and reports, the Observers' narrative and the final communication/outreach phase.

**Tools are developing to meet the community's needs**

The Framework provides guidance on the "how to". Our site at broto.eco provides shared work platforms and resources. Our conference convenes the brightest minds on the subject of art-science collaboration on climate change. The model provides ways to capture ideas, commitments and process.

**Relevance is critical to the project succeeding.**

This only works if the work produced is relevant to the challenge – in our case, aspects of understanding climate change – which is vast, deep, ingrained and expensive.

**Timelines with milestones.** While we want benefits that may accrue in the future, a project timeline with key accountability in execution of a scope of work will work to build credibility and evaluation for key stakeholders.

## 8) Burden of outcomes

Among the first questions: What will this collaboration achieve?

The unknown is what piques curiosity, our imaginations and our creativity. It inspires -- and our framework strives to get out of the way of that. And, with all that is known about the climate change threat, including the lack of urgent response to the scale of the threat, we are also excited to see what develops.

We hope – and *hope* is a key Broto quality — that whatever evolves from the Broto collaborations is amazing, inspiring and compelling in moving us toward a more urgent, informed response to the human-made climate change threat.

However, what we get is maybe less important than how we get it. We need to define a different way to evaluate Success/Failure.

What is natural, but entirely unhelpful, is a need to outline the outcome of these collaborations before they have begun. What will the artists create? What science findings will change the tide? How will our minds be blown by this shared process work?

That's a lot of pressure before we have even begun — and a creative buzz killer that we hope to avoid from the outset.

Our Broto collaborations are about process versus outcomes. What might those be? New art, new science, something else?

While we hope for groundbreaking science and art over the long-term, the focus is on innovative ideas that come from the process of “value-add partners” co-creating art and science.

The burden of defining outcomes takes the focus off of creating a comprehensive, supportive and expansive collaboration process that allows innovation to flourish. We're not forcing innovation, but creating an arena where it might be properly fostered.

Our collaborating artists and scientists are not required to do anything more than engage enthusiastically and openly in a process of mutual, real-time, substantive and credible art-science collaborations. We want them to document how it goes, where it goes and where the benefits are.

We think that the world needs a greater sense of “discovery” and Broto's goal is to let discovery happen without flipping to the last page of the book.

*Potential Addendums include Worksheets and Agreements. To be discussed.*