
Exploring and experimenting with bundles of 'hacked' practices as prototyping for sustainable transitions

Maria Vitaller del Olmo¹, Amalia de Götzen¹, Luca Simeone¹, Nicola Morelli¹

¹Service Design Lab | Aalborg University (Copenhagen, DK)

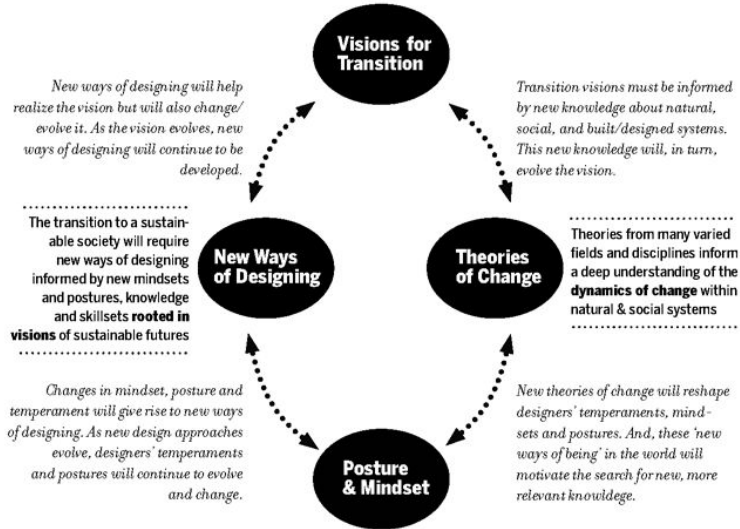
RSD14 Relationality in Complexity | Relating Systems Thinking & Design | October 2025

Introduction

TRANSITION DESIGN FRAMEWORK

Four mutually reinforcing and co-evolving areas of knowledge, action and self-reflection

.....
Visions for transitions to sustainable societies are based upon the reconception of entire life-styles that are human scale, place-based, but globally connected in their exchange of technology, information and culture. These visions are based upon communities that are in symbiotic relationships to the ecosystems within which they are embedded.
.....



.....
Living in & thru transitional times requires a mindset and posture of openness, mindfulness, self-reflection, a willingness to collaborate. It is based upon a new, more **holistic worldview** and ecological paradigm.
.....



Introduction



.....
Theories from many varied fields and disciplines inform a deep understanding of the dynamics of change within the natural & social worlds.
.....

- Living Systems theory, • Max-Neef's theory of needs, • Sociotechnical regime theory,
 - Post normal science, • Critiques of everyday life • Alternative economics, • Social Practice theory • Social psychology research
-



Introduction Practices

- Defined as “socially shared patterns of activity” (Watson and Shove 2022), practices are deeply rooted in societies’ everyday life and contribute to existing sustainability challenges.
- “Practices are defined by interdependent and mutually shaping relations of materials, meanings and competences”. Other influential aspects like location or bundles define practices and how they are performed (Shove et al. 2012)
- Practices have been identified as a possible focus units for transforming established socio-technical systems and transition design researchers (e.g. Kuijer 2014, Irwin et al. 2021) claim the value of (re)designing practices in the everyday life to influence shifts towards sustainability
- Most of the available research focuses on the integration of social practice theory and transition theory from a theoretical perspective (e.g. Kossoff 2008/2011, Irwin et al. 2020); consequently, the actual application of practices in transitions remains underexplored.



Introduction

.....
The transition to a sustainable society will require new ways of designing that are characterized by:
.....

- Design for 'initial conditions',
 - Placed-based, context-based design,
 - Design for next level up or down in the system,
 - Network & alliance building
 - Transdisciplinary and co-design processes,
 - Design that amplifies grassroots efforts,
 - Beta, error-friendly approach to designing
-



**New Ways
of Designing**



Introduction Prototyping

- we hypothesise that prototyping can play a significant role in addressing transitions through the work with practices
 - given the impossibility of anticipating the effect of intervening in a system, interventions should be approached **reflectively and iteratively** (Irwin et al. 2020).
 - **“safe-fail” temporary experiments** that provide “small-scale ways forward to avoid catastrophic impact” Wallace (2021 p.10)
- the practical and methodological implications of the application of prototyping in complex transformations remains underexplored (Maiorana 2021, Drew et al. 2021) and specific research on prototyping practices within transitions or systemic change is also scarce
 - some studies have stressed the **value of prototypes as socio-material configurations embedding the performance of practices** (Suchman et al. 2002, Danholt 2005, Wilkie 2010), that can already exist or be entirely new (Ehn 1988, Mogensen 1992)
 - however, those studies are not contextualised within complex socio-technical transitions



Research
question:

**How can the prototyping of practices
support design processes aiming for
sustainable transitions?**

παλίμψηστος < palimpsestos, 'again' + 'scrape'





JEREZ DE LA FRONTERA

Methodology

KEY PROTOTYPING MOMENTS IN JEREZ DE LA FRONTERA



TIMELINE OF OUR STUDY

Prot. planning workshop
Archival analysis
Participant observations
Data analysis



**Practice definition through
early exploratory prototyping**





early prototyping actions

-
- Filtering dimension: exploratory prototypes
 - a) comprehending the existing practices and their relevance in the context,
 - b) identifying the practices' elements and the actors performing such practices, and
 - c) co-envisioning, together with those actors, possibilities of reformulation of the practices towards a more sustainable landscape.
 - Manifestation dimension:
 - spontaneous, semi-guided, and semi-planned prototyping interventions
 - low fidelity in relation to the concept/solution
 - smaller groups of stakeholders involved enacting the original targeted practices, mainly in the context of the practices themselves.
-

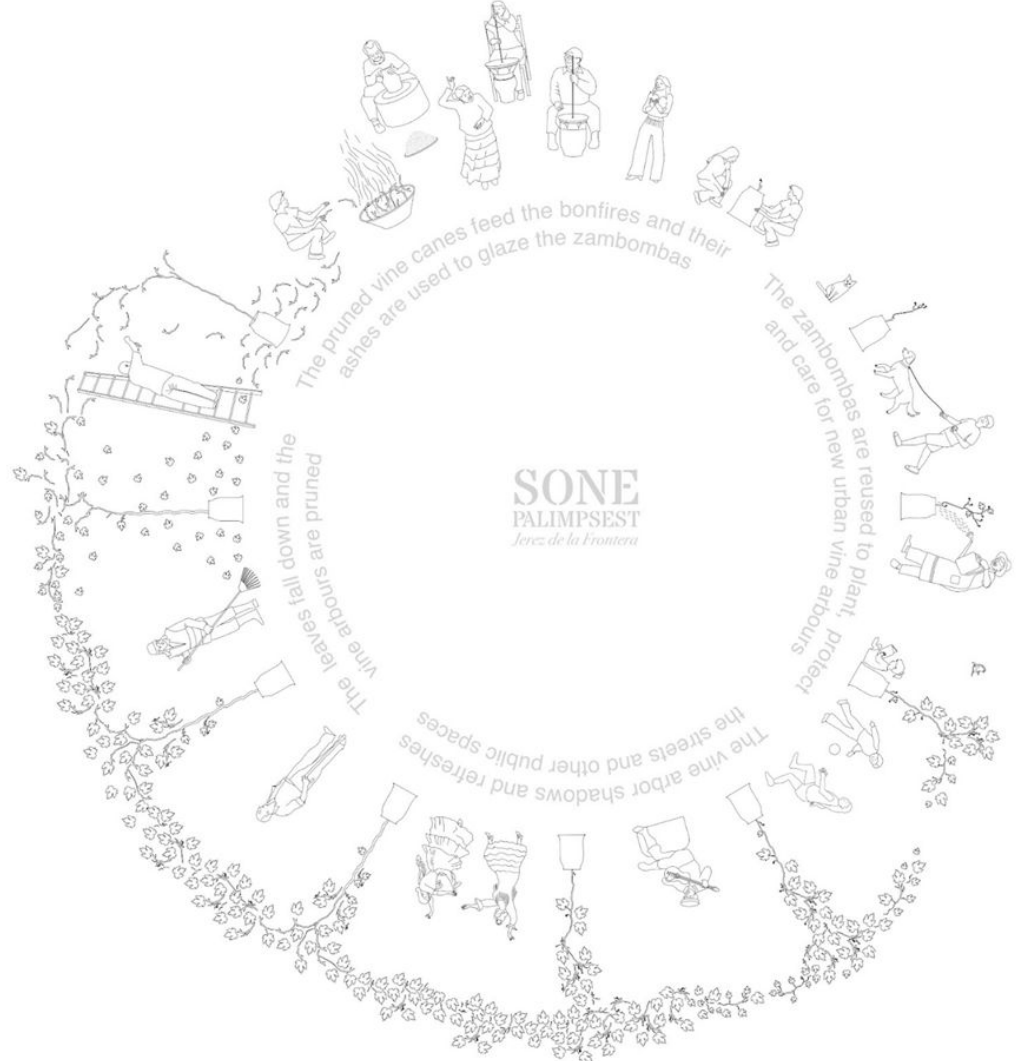


early prototyping actions

Name of the practice	Connection with the Jerez landscape	Materials	Competences	Meanings
Zambomba fabrication	The ceramic part of Zambomba instruments are developed outside of the Jerez region. Only one family in Jerez (father and son) maintain the assemblage of all the materials into instruments	Ceramic vase, cotton fabric, hardwood stick	Zambomba assemblage, percussion performance,	The family in Jerez that continues assembling Zambombas does it to maintain the legacy, and consider it as a "responsibility" towards their region
Zambomba performance	Traditionally, Zambomba rituals occurred in private family patios, where (mostly women) gathered to sign traditional songs with lyrics of protest or important lessons to younger generations. In recent years, Zambombas have become a full festival, receive thousands of tourists and are more disconnected from its original cultural roots	Zambomba instruments, firepit, lyric books,	Zambomba performance, singing and dancing,	Local gatherings around a fire to share songs that transmit local knowledge and stories, and cultural heritage. In Zambombas, everyone (kids, elderly, locals or outsiders) are invited to join the circle and sing along, and get in the center to dance
Renaturalization of the urban space	Some years ago, one of the local wineries installed a variety of vine in one of their private streets to shadow it. The practice resulted in a smart and aesthetic solution for reducing the heat at the street level. Some of the winery owners, through the local association Amigos de los Árboles, has been trying to promote this practice in the municipality to replicate in public areas, unsuccessfully.	Specific variety of vine, metal wires (structure)	Vine growing, urban planning	The covered alley has become an icon of the winery, attracting tourists and locals for the pleasant and aesthetic atmosphere the vines provide in the hot season.

Table 2. Practices leveraged by the Jerez solution ecosystem





The pruned vine canes feed the bonfires and their ashes are used to glaze the zambombas

The zambombas are reused to plant, protect and care for new urban vine arbours

SONE
PALIMPSEST
Jeux de la Fronteira

The leaves fall down and the vine arbours are pruned

The vine arbor shadows and refreshes the streets and other public spaces

JEREZ DE LA FRONTERA'S SOLUTION ECOSYSTEM



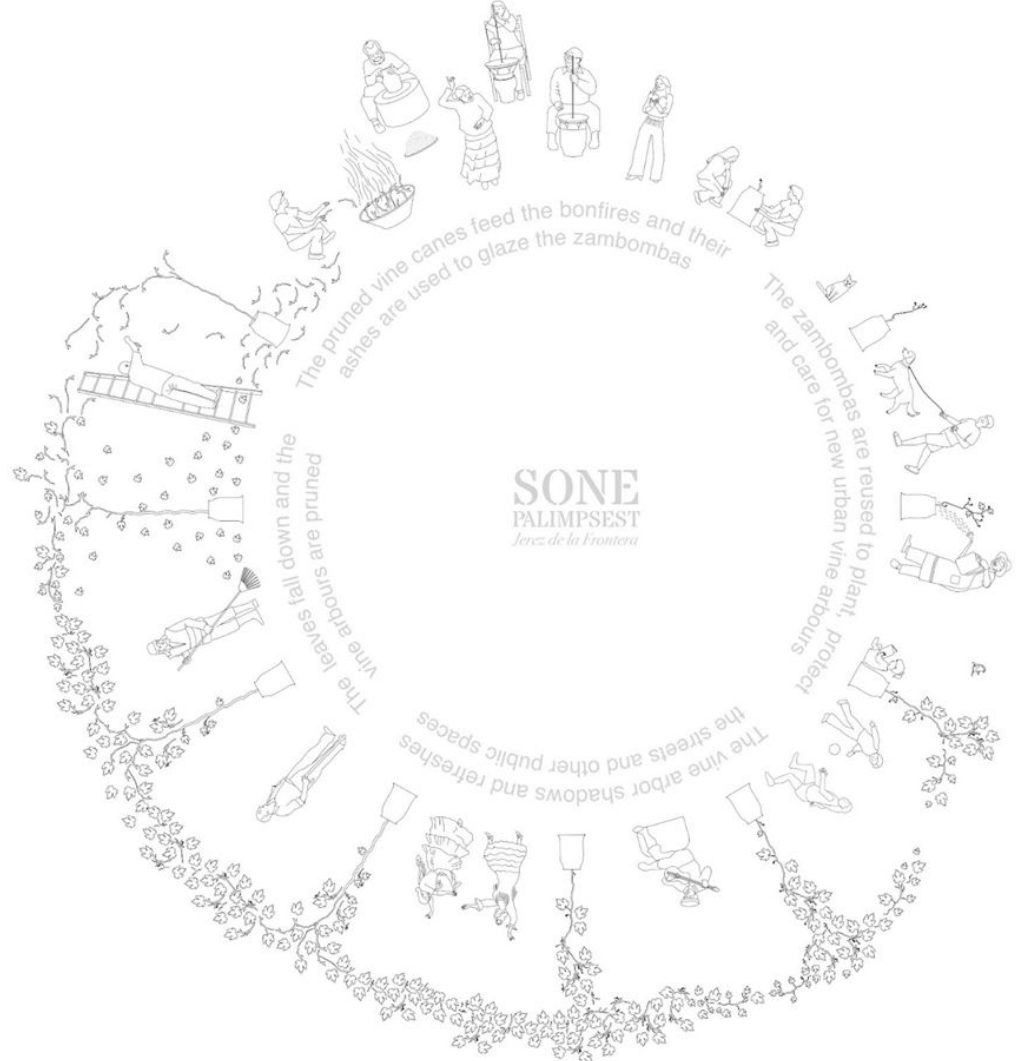
An **educational program** in collaboration with the ceramic programme of the local school of arts to re-think the whole process of shaping and producing Zambombas¹. The curriculum is redesigned to invite students to make zambombas in alternative shapes, from locally-sourced materials collected by them in Jerez's countryside, and using energy from renewable sources.



The reconsideration of the **Zambomba ritual**. In traditional zambombas, local groups gather around a bonfire singing popular songs intertwined with activist and protest lyrics. The solution proposes to revisit those lyrics with local experts and AI to generate a composition that presents the challenges affecting the territory, and to invite local communities to perform it with the zambomba instruments created at the school of arts.



The **renaturalization of the urban space**. To defeat the severe temperatures in the south of Spain, the solution proposes to reuse the zambomba instruments after being played in the ritual. By breaking the bottom of the instrument, the zambombas become urban pots, hosting a type of vine that grows through walls and wire to provide shadow and reduce the temperature in the city centre.



SONE
PALIMPSEST
Jeux de la Fronteira

**performing 'hacked' practices
through prototypes**



later prototyping actions

-
- Filtering dimension:
 - from “understanding” and “exploring” (predominant in the early prototyping) to “evaluating”, “assessing”, or “testing”
 - focus on practices remains, but now are “hacked” practices
 - 4 primary objects of inquiry (Table 3)
 - Manifestation dimensions:
 - Evident difference on techniques employed and fidelity levels
 - scenarios as close to reality as possible
 - Important questions regarding the budget, resources, participation and fidelity
-



later prototyping

Identified prototyping focus	Example of a prototype
1. Elements of the practices and their (re)integration in the proposed practices	A series of firing tests using different enamels from pruned vegetal leaves and branches to evaluate their behavior on the clay that would be used for the zambomba making (April-May 2024)
2. Enactment of the 'hacked' version of the practices by stakeholders in the local context	Pilot kick-off of the ceramic crafts program (September 2024) focusing on the Zambomba, including a) dialogues and presentations with experts on the instrument, b) walks and material collection in the rural landscape for student to engage with a bioregional approach and 3) visit to the archeological museum, focused on the traditional vases and containers from the area that inspired the Zambomba instrument
3. Integration among groups of practices to install the solution ecosystem	During the firing of the Zambomba instruments at the School of Arts (December 2024), the fires were also used as a reference to the Zambomba ritual. Coinciding with the dates of the zambomba festival in the city, the PALIMPSEST team members displayed some of the elements present in Zambomba rituals (musicians, traditional lyric books, popular food) around the firepit and invited the students and teachers to participate in an rudimentary test of the gathering and singing performance.
4. Required (adjustment of) rules and norms associated with the proposed practices	The Jerez team has initiated and facilitated a series of regular meetings and dialogues with the Municipality of Jerez where they presented, using different formats (photomontage, slidedeck, visits to the site, testimonials) the idea of the renaturalization of certain areas of the city center and discussed with the municipality possible ways to facilitate the implementation of the idea by changing the current norms that prevent private groups to develop green infrastructure initiatives in public spaces.

Table 2. List of prototyping focuses identified in later prototyping activities in Jerez

later prototyping actions

-
- Filtering dimension:
 - from “understanding” and “exploring” (predominant in the early prototyping) to “evaluating”, “assessing”, or “testing”
 - 4 primary objects of inquiry (see Table 3 in the paper)
 - focus on practices remains, but now are “hacked” practices
 - Manifestation dimensions:
 - Evident difference on techniques employed and fidelity levels
 - scenarios as close to reality as possible
 - Important questions regarding the budget, resources, participation and fidelity
-



practical and theoretical contributions

- Our study contributes to bridge some existing gaps in practical and theoretical design work on operationalising SPT in Transition Design through design:
 - The need to operationalise the potential of practices as possible transformation units within transitions (e.g. Irwin et al. 2015, Wallace 2021, Kuijer 2014)
 - The lack of examples and practical application of design methods in practice-oriented design processes for sustainable transitions (e.g. Pettersen
 - And extends the literature on prototyping approaches and methodology for the realisation of envisioned sustainable transitions (e.g. Bijl-Brouwer and Malcolm 2020, Maiorana 2021, Drew et al. 2021)





Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.

Thank you!
