

# Unmaking as Agonism: Using Participatory Design with Youth to Surface Difference in an Intergenerational Urban Context

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## ABSTRACT

Design has been used to contest existing socio-technical arrangements, provoke conversations around matters of concern, and operationalize radical theories such as agonism, which embraces difference and contention. However, the focus is usually on creating something new: a product, interface or artifact. In this paper, we investigate what happens when critical unmaking is deployed as a deliberate design strategy in an intergenerational, agonistic urban context. Specifically, we report on how youth in a six-week design internship used unmaking as a design move to subvert conventional narratives about their surrounding urban context. We analyze how this led to conflictual encounters at the local senior center, and compare it to the other, making-centric proposals which received favorable feedback but failed to raise the same important discussions. Through this ethnographic account, we argue that critical unmaking is important yet overlooked, and should be in the repertoire of design moves available for agonism and provocation.

## CCS CONCEPTS

• **Human-centered computing** → **Interaction design theory, concepts and paradigms**; • **Social and professional topics** → **K-12 education**.

## KEYWORDS

agonism, youth, older adults, civic engagement, making, unmaking, participatory design, critical unmaking, virtual reality

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## 1 INTRODUCTION

It has never been more important for citizens to be involved in directing the course and pace of social change. The grand societal challenges that we face – including climate change, racial and social inequality and environmental collapse – demand collective solutions that can address a multiplicity of local and specific needs. Young people have often emerged as the leaders of numerous civic movements, forming global coalitions and taking situated and provocative actions in response to the perceived widespread apathy of public authorities. In this paper, we investigate the social and designerly ramifications when youth use potentially fractious strategies as provocative design moves within an informal pedagogical context. In particular, we call attention to the critical and democratic affordances of *unmaking*, and argue for it as a central if neglected aspect and potential method of socio-material encounters around difference in HCI.

*Design as Provocation* [48] refers to a multitude of approaches that use design in HCI to critique existing socio-technical arrangements [3], surface matters of concern [23], imagine radical futures [27], and operationalize theories from other fields. Within the critical provocation project, a multitude of constructs such as critical making [84] have expanded the mandate of design from definitive, status-quo-affirming resolutions [27] to engagements around issues, some for which “no consensus exists” [84]. These moves are paralleled by recent developments in democratic theory itself, where democratic procedures seeking universal rational consensus, transcendence over difference, and assimilated/dispassionate/disembodied voices [47] are countered by others embracing dilemmas [51], paradoxical politics [18], and multiple modes of articulation [107]. This shift is exemplified by *agonism*, a political theory that critiques deliberative, consensus-oriented democratic models for ignoring the antagonistic nature of human relations, and sees “forceful but tolerant disputes among passionately engaged publics” as healthy, productive, and necessary provocations for a pluralist democracy [10, 76].

Youth are natural provocateurs. They are always unmaking and remaking themselves and their worlds from the multilayered positions of radical hope [70], uncertainty [19], responsible citizenship projections [68], and social engagement on their own terms [70]. Their look on the present and future, coupled with their spontaneity, imagination, and appetite for adventure puts them in a unique position to try new things when approaching the world as designers.

Still, in most of the HCI literature on designing for agonism (and provocation more generally), the designer role is usually played by professionals or specialists (adults) of some kind: artists, product designers, researchers, or civic activists. There is little empirical work investigating how youth can and do spontaneously appropriate and deploy design as a way of critiquing current systems, contesting existing social arrangements, or proposing radical alternatives [52, 101].

In this paper, we shed light on youth engagement with agonism and (un)making by exploring the conflicts arising during a middle school summer program titled CivicDIY for urban youth in a major American city. The program was a follow-up to a social studies unit we taught at the youth’s middle school during which they gathered intergenerational data on what home meant to their community. The youth joined CivicDIY to refine the data, translate the findings into design interventions, and present their visions to older community members. One group proposed the destruction of a historic building turned luxury condominium in the community. Their unmaking proposal was unfavorably received, generating a conflictual intergenerational confrontation around irreconcilable land use priorities. At the same time, proposals that entailed making (virtual or physical) were much more favorably received but did not raise the same kinds of issues around difference. Through an analysis of these proposals and the reactions they received, we discuss the design choices made by the youth, how those choices manifested their values and priorities in material form, how older adults responded to these proposals through a fractious dialog at the local senior center, and how this interaction expressed broader concerns around land use, equity and other sources of inherent intergenerational conflict.

Further, we build on the empirical data of this ethnographic account to inductively develop concepts around agonism and unmaking. Specifically, we propose a new move in the design for provocation space, that we call “critical unmaking”. Much of the prior work on designing for agonism in HCI [10, 22, 50, 58] leverages the making and construction of visualizations and prototypes in “a provocative manner that purposefully deviates from familiar configurations” [22] to surface contestations and conflicting priorities. In a similar vein, Ratto’s work on critical making [84] offers a particularly salient vision, through direct engagement with provocation, theory-building, material practice and critical reflection, and a commitment to contingent and open-ended making processes that center the experience of making more than the result. Instead of making, CivicDIY offers insights on the critical affordances and rhetorical power of *unmaking*, which is the act of undoing, disassembling, or destroying, as a design move for provocation or agonism. We call this kind of unmaking, that is doing the critical work of provocation generally or agonism more specifically, *critical unmaking*.

Findings from CivicDIY also help us reflect on several additional questions around designs for provocation. Since these designs are often a critique of *someone or something*, what happens when the designs are shared with those who may not agree with them? These are difficult conversations to have, especially if there is some fundamental underlying *difference* among people or groups viewing the issue. How is design used as a rhetorical move within these spaces? What if we recognize unmaking that is done on its own terms,

unobscured by any design/making imperatives, as a design move? How do these moves surface the underlying intergenerational, intercultural and/or socio-economic tensions that characterize all urban spaces? And how do other people react to the uncomfortable tension that is inevitably created when potentially threatening ideas are introduced in material form?

This paper makes three contributions. First, we provide an ethnographic account of how youth leveraged design to communicate their concerns such as the need for fun, social justice, and intergenerational arenas. Second, we introduce critical unmaking and compare it to making and the work each does in navigating diverging priorities. Third, we reflect on the methodological and pedagogical implications of critical unmaking as a design move for provocation, particularly the need to protect agonistic practices, care for participants, and consider possible “complications” [2].

The rest of the paper is organized as follows: we start by positioning our work at the intersection of design as provocation, fractious interactions with/through HCI, codesign with youth, and the growing literature that has begun to leverage the affordances of unmaking in HCI. We then narrate the CivicDIY youth internship through two ethnographic episodes: the youth design process and outcomes (section 6), and the final presentation at the senior center (section 7). In the findings within each episode, we analyze the values and aspirations inscribed in the artifacts involved and the agonism arising during that episode. We synthesize the two episodes by identifying three forms of (un)making underpinning the youth proposals and contrast their affordances as provocations. We then discuss how critical unmaking leveraged by these youth diverges from unmaking as typically characterized in HCI. We share the resulting methodological and pedagogical implications, including the need to recognize it as a move, and why in certain contexts it can do agonistic work that strictly constructive approaches cannot. The paper concludes by reflecting on how to approach tensions arising through and around agonism and unmaking.

## 2 DESIGNING FOR AGONISM

Agonism is a political theory that envisions a distributive power where “anyone, anyone at all” can step “from below” to confront dominant orders and carry out a contestational struggle [66]. It arose in contestation to more amiable/procedural versions of democratic theory such as Habermas’s deliberative model [47] which emphasize rational, consensus-based decision making. Agonism in contrast recognizes that citizens have different and even conflicting conceptions of the good, and that rational consensus is a fragile façade that both narrows the range of allowable political expression (including in ways that elevate or demote particular voices and groups) and conceals the presence of violence, repression, and antipathy. As argued by theorists such as Chantal Mouffe, the real threat to democracy is when “the ineradicable character of antagonism” is irradiated in the name of “universal rational consensus” [74]. Agonism envisions citizens in democratic societies engaging “in many different purposive enterprises and with differing conceptions of the good,” but submitting to a set of common “ethico-political” values [73]. This engagement is in lieu of communicative norms that channel and order political expression into implicit speech hierarchies that fit and serve some groups more

effectively than others [107]. Agonism also admits that power and exclusion can never be completely erased, so they must be made visible and contestable. Such egalitarian vision and embrace of contestation in agonism requires permanent spaces for conflicts and confrontations, where various members of the public engage in passionate disagreements and dialogues that tinker with orders and hegemonies not rooted in their conceptions of the good. A healthy agonistic democracy is thus always expanding the “repertoires of contention” [96], offering up alternate and expanded modes of expression that bring new or heretofore marginalized political voices and actors more effectively into the realm of democratic practice and contestation. The frictions that these new and expanded forms of inclusion give off become in part the engine of democratic novelty and invention.

Several HCI researchers [10, 22, 50, 58, 92] have explicitly or implicitly taken up designing for agonism. The goal of such design is not to produce marketable solutions, but to surface questions, conflicts and different points of views, as well as support contestations and citizen assemblies. Building on agonism ethos, DiSalvo argues that if “we abandon the notion that any one design will completely or even adequately address our social concerns or resolve our social issues, then adversarial design can provide those spaces of confrontation — in the form of products, services, events, and processes — through which political concerns and issues can [be] expressed and engaged” [22]. Similarly, Björgvinsson et al. envision agonistic public spaces where participants designing together engage in constructive controversies that open up “new ways of thinking and behaving” among adversaries [10].

While agonism embraces conflict, it seeks to defuse and divert destructive forces to achieve a “pluralist democratic order” [10, 22, 73]. DiSalvo therefore emphasizes that: “... rather than framing the conflict as among enemies that seek to destroy one another, the term adversary is used to characterize a relationship that includes disagreement and strife but that lacks a violent desire to abolish the other” [22]. Designs for agonism are generally prototypes, exhibition pieces, and online tools. This affords them a natural safety buffer between conflicting sides that prevents conflict from turning violent. These designs *make* (e.g. social robots, data visualizations, ubicomp systems) with a “speculative” and “spectacular” sense of aesthetics to entice user engagement [22]. And they are generally rooted in the traditions of making, and envision desirable outcomes that are often already widely accepted in a particular society.

CivicDIY was designed following the tradition of critical pedagogy and participatory design as emancipatory processes that foreground what the youth see, feel, and discover in their everyday experience while engaging with larger issues around urban priorities and justice. We did not intentionally plan to design for “agonism”. But as the youth appropriated this space, the program turned into an agonistic context, whereby they continuously stepped up to recast what a good or desirable program outcome would be, and transformed our role from teaching to supporting them as they blaze “a different kind of politics” around spatial use [13]. We discuss the social dynamics of how youth claimed the space and agonism emerged in section 6.2.

By maintaining a persistent “agonistic struggle” [76], the youth also proved that making as design may not suffice when contesting or maintaining the strife with a *different other*. Critical unmaking

organically emerged in this pedagogical design context, and served three purposes: expressing “matters of concern” [23], raising questions around island use and equity, and contesting the state of the surrounding urban context. As the rest of the paper shows, critical unmaking as a provocation proved not as palatable as we see in the design for provocation or agonism literature, but it met agonism right at its mandate of surfacing questions and contestations.

## 3 RELATED WORK

Our work is situated at the intersection of design as provocation, friction in/through design, youth civic engagement through design and technology, and unmaking.

### 3.1 Design as Provocation

Hansson et al. [48] use Design as Provocation as an umbrella term to refer to a multitude of design constructs that use digital and physical mediums to draw awareness to social, cultural, and political issues and provoke critique and discussions [48, 101]. This includes reflective, speculative, critical, and adversarial design (among others). Dubbed by its authors as a “technical practice” within the “critical project”, reflective design seeks to continuously bring out the unconscious through design processes and interactions [90]. Speculative design draws on “rigorous analysis and thorough research” yet loosens the reign of “official reality” to enable the social dreaming of new possibilities [27]. Design fiction also tells speculative stories about “future things” through physical objects that “stand in for that future and refer us to it” to elicit lucid imagining and pondering [11]. Critical design is concerned with scrutinizing the designers’ ethical objectives and generating new design values and theories [3]. It can resort to extremity [37] or taboo to make critical commentary, as in the Menstruation Machine [4]. Taking a more explicitly political stance, adversarial design uses “cultural production”, “movements and genres”, “practices and objects”, “products and services”, and “our experiences with them” to enable agonism [22]. Lastly, critical participatory design is concerned with the insights about power and positionality emerging from participant interactions during the design process to “mainstream the role of individuals ... towards the achievement of ... specific targets that they have reason to value” [95].

Perhaps most relevant to our work, critical making is a technique that emphasizes the design prototypes as “a means” to better understand socio-technical issues through collective construction, conversation, and reflection [84]. Here, the focus is on the experience of designing, and the reflection and discussion that process can generate, more so than the result. Our emphasis is similar with critical unmaking, in that we are interested in the conversations and spaces that can be opened up by its rhetorical power, rather than necessarily being committed to unmaking as a desirable end goal or result. But where critical making emphasizes the “shared acts of making” [84], critical unmaking calls attention to what can be surfaced only by removal, take down, or deletion.

Design as Provocation is often applied in participatory settings to bring people together “through and around” matters of concern to envision futures and map out change [23, 28, 60]. Because such design contexts encourage discussion, participants often play an

active role, revealing their contentions, controversies, and attachments [48]. This entails many challenges. One pertains to the role “professional” designers are supposed to play: build interventions based on participant insights, support interactions among them without leading too much, or bridge their expertise with powers of change [65]? Another is how to seed “discussion, ideation and anticipation”, especially if the issues are vexing [101]. A third is how to cultivate the critical project among participants who are not trained designers [82] or might prefer other modes of expression. In our case, these three challenges coalesced, particularly as the issues the youth worked with reflected underlying differences that influenced their design priorities.

### 3.2 Friction in/through Design

We find fractious encounters arising in three forms in HCI literature: as unanticipated interactions, through designerly things, and within deliberate agonistic contexts.

HCI researchers have recorded numerous examples of unexpected conflict arising in design and CS. For example, Arawjo et al. bring up the social complications emerging when youth in a programming course for refugee communities designed a game based on xenophobic ideas [2]. Vakil et al. highlight incidents of CS classroom microaggressions, calling out the “reductive, depoliticized perspective on learning” in STEM [99]. DiSalvo provides an account of disagreement among community members around installing pirated radio [21]. Design scholars bring up the “breakdowns” of designer expectations [5], tensions around non-traditional use of making tools [6], social discomfort [5], the negotiation of designer-participant roles [94], and whether there is a “compliant participant” who follows “specific moral imperatives and raises specific normative expectations” [83]. Others shed light on how insights of marginalized participants might be subsumed as irrelevant despite the organizers’ good intentions [98]. These works generally agree on the need for “better models for how to do community-based HCI and design research in the context of contestation and radical pluralism” [21].

The second form is through artifacts designed to intentionally raise opposition [62], destabilize [49], and provoke citizens to pause, reflect, and question the status quo [58]. Clement et al. for example propose custom government ID overlays which contest information overshare [17]. Natural Fuse, a web of households connected through smart plants, creates tension among system users over selfless power consumption versus selfish consumption which kills plants in other households [22]. The conspicuous design of Scream-Body, which records and releases the user scream later on when appropriate, challenges the “social repression” necessitating its very existence [24]. Finally, Dunne and Raby’s dark designs use “[n]egativity, cautionary tales, and satire” to “jolt the viewer out of a cozy complacency” [27].

The last form of fractious encounters is through “agonistic public spaces” [8] where design activities center controversies and pluralism among participants working together [48, 75]. The Malmo Living Labs is an example of such arenas where the designer role becomes that of supporting such assemblies with potentially conflicting interests (e.g. occupation of Palestine), legitimize the marginalized (e.g. immigrant youth NGOs), and provide technical training

[9, 10]. Our work builds on each of these traditions by exploring both the self-discovery and the unanticipated conflict that can occur when designerly things are deliberately used as provocations within an agonistic context.

### 3.3 Co-Design with Youth

CivicDIY was designed following the tradition of critical pedagogy rooted in the youth funds of knowledge [41]. Education and learning sciences provide many approaches that center the lived youth experience. Scholars argue that civic participation as traditionally defined and constructed tends to privilege “adult perspectives on what youth should be doing ... rather than asking young people what actually engages them” [69, 79, 87, 108]. Others have found that young people typically favor expressing themselves through producing content rather than consuming it and thrive on conversations around the insights they find [7, 56]. Critical pedagogy facilitates learners bringing in the social and political aspects of their lives to critique, reflect on, devise civic action, and imagine alternatives beyond past and present limitations [33, 39, 71]. Building on this tradition, Social Design–Based Experiments (SDBE) probe the cultural historical means of vulnerable students and “the social situation itself” to instigate change through co-design, deployment, continuous co-reflection, and co-revision [44, 45]. Educators have also leveraged civic dreaming [68], speculative literacies [70], storytelling [57, 106], spatial interdependence [87], visual spatial representation [30, 72], mentorship [38], and the affordances of the “third space” [43, 100] to engage youth in social change and critical inquiry.

Youth-led Participatory Action Research (YPAR) focuses on agency by placing youth in the driver’s seat to address issues that matter to them be it in scoping, data generation, analysis, or dissemination [15, 20, 31, 32]. Mainsah and Morrison advocate participatory design to meet youth at their autonomous and self-forming ideals, and connect them to structured institutions of civic engagement [64]. Druin et al. explore co-design with youth, fusing participant observation with participatory design to channel the youngster’s blunt opinions and insights to improve technology design for both children and adults [25, 26]. Garcia et al. find that Black youth view their participation “in the institutions and decisions that affect their lives” as an empowering counternarrative to racial misrepresentations [36]. Finally, the process of design and physical making with youth and the mistakes made along have been found healthy for experimentation, problem solving, and exposure to diverging preferences [12, 46, 102].

### 3.4 Unmaking

Our work engages with ongoing conversations in HCI that recognize and utilize unmaking as a design move. Designers and researchers have leveraged unmaking in numerous creative ways in art [104], photography [67], education [42], game design [29], fabrication [77, 93], technology repair [55], disassembly [85], environmental sustainability [34], and artful activism [86]. In HCI, a slew of “un” practices such as unmaking [93], uncrafting [78], unfabricating [105], and undesigning [81] heralds a discourse geared towards experimentation with objects, features, and materiality. Song and Paulos propose unmaking as “the destruction, decay, and



**Figure 1: Mapping activity where youth marked the island usage patterns, visions, and sentiments (left) and final presentation at the senior center (right)**

deformation — of physical artifacts” [93]. Their formulation posits unmaking as a valuable extension to making, achieved by digitally designing and fabricating objects that unmake in pre-defined ways post-making. Wu and Devendorf [105] develop a pipeline of hardware, material modifications, and digital design tools for unfabricating smart textiles to sustainably mend, disassemble, and reuse them. Murer et al. propose uncrafting as “the thoughtful, reflective process of disassembling . . . something which could be developed into a practice that – not unlike other studio crafts – requires particular skills, involves specific ways of reflection, and develops and according set of terms and framings” [78]. Uncrafting is geared towards material exposition, inspirations drawn from its inherent components, inquiry into the underlying design, and form-function exploration. Lastly, Pierce formulates undesigning as “the intentional and explicit negation of technology” attained through a range of strategies such as inhibition, replacement, and erasure [81]. Our formulation of critical unmaking builds on the rich potentiality identified in this literature, but is embedded more in social processes rather than physical matter, and activated at the confluence of the design as provocation, friction, and co-design with youth.

## 4 BACKGROUND AND MOTIVATION

Our campus is located on a small residential island within a major American city. After serving as home for various “undesirable” institutions such as a “poorhouse”, a mental health institution and a smallpox hospital, the island was revamped in the 1970s as a mixed-income residential community. Today, it is home to a large number of immigrants and expatriate families, although gentrification is gradually changing the island’s socio-economic and racial composition. A large population of adults over 60 also live on the island for many reasons including subsidized rental units, minimal car traffic, quiet floors in some buildings, and a thriving senior center. In the Spring of 2018, we developed and taught a 7th grade social studies unit using oral histories as a methodology at the island middle school in the vicinity of our camps. The students interviewed their parents and other community members, finding through qualitative data analysis a ubiquitous need for increasing social cohesion on the island. We followed this by implementing a summer program to continue working with selected youth on translating these ideas and findings into physical and digital solutions. This paper reports primarily on the latter activity.

### 4.1 Student Recruitment

We announced the summer program, titled Civic Design Internship for Youth (*CivicDIY*), at the end of the school year. Each student was promised to learn some skills that would help their high school application, regular snacks, a certificate of recognition, and a \$50 Amazon Gift Card. We eventually ended up with a summer cohort of 7 students. Five males: Aditya, Adnan, Khalid, Ferguson, and Usama and two females: Layla and Maha (all names are anonymized). One student was of a Latin American origin, one Arab, and five South Asian. Four of the students reported practicing Islam, one practised Christianity, and two Hinduism.

### 4.2 Program Structure

The program met each Friday for six weeks during June and July 2018 from 10am to 4pm. We convened and worked in our research lab on campus, which has a large multi-purpose space with movable chairs, tables, whiteboards, and pin-up walls. Most of the program activities happened in that space, but sometimes, we took the youth to the fabrication lab across the hallway, attended events in other parts of campus, or went for field visits on the island.

The morning session was used for homework debriefings, seminars, and guest lectures and the afternoons for site visits, prototyping, and pinup reviews. The youth had homework such as doing extra research on their assigned part of the island, interviewing users, and producing sketch models. Some youth opted to drop into our fabrication lab between the Friday sessions to finish prototyping. The program goal was to supplement interview findings from the pre-*CivicDIY* school project with site data, and then prototype design interventions informed by the collective findings. A couple of weeks into *CivicDIY*, the organizing team saw that building a physical model of the island could be useful for future co-design sessions. A communal fountain proposal also seemed from our perspective like a good way to coalesce everyone’s needs. We hoped to produce one and take it to the island’s governing body which was offering funding for community enhancing projects.

### 4.3 Pedagogical Design

The program included history and case study seminars, site visits, user observations, and mapping to help youth probe the island critically and tie its spatial aspects with possibilities for social and

technological interventions. The basic design principles of CivicDIY were as follows:

- **Treating Youth as Experts:** We wanted youth to surface and use their expertise to execute the internship goals. Therefore, we engaged them in complete research, analysis, ideation, and prototyping cycles. The activity generating most design insights and ideas was a large-scale island map (Figure 1) on which we reflected on what could be added, removed, celebrated, or augmented. After three cycles of research and prototyping, the youth had the freedom to come up with whatever they felt improved social cohesion on the island.
- **Collaboration:** The youth were allowed to work in groups, rotate, regroup, and brainstorm together. During breaks, they indulged in bickering, joking, sitting on the floor, holding rolling-chair races, speaking to other people on campus, and flying paper helicopters down the atrium. These activities served as auxiliary opportunities for cross-pollinating ideas.
- **Frequent Feedback:** We held individual desk crits and group reviews every session to make sure the youth were making progress. Pin-ups served as a medium to both critique and speculate as a group on what it is like to use, live in, or own the ideas presented.
- **Exposure to Other Ideas:** We held 15-to-30-minute seminars every week covering precedent cases from our own work in architecture, ubiquitous computing, and ICTD. Youth learned about the urban renewal phases the island went through, and saw the built and speculative master plans by renowned architects such as Koolhaas. We also took them to watch design guilds on campus, visit other research labs, and engage with the tools and models in our fabrication lab.
- **No Formal Evaluation:** We set no requirements to obtain the certificate of recognition and gift card other than regular attendance, completing all activities, delivering the final presentation and participating in an exit interview. The intention was to shift focus away from competition and metrics to issues and engagement.
- **Intergenerational and Intercultural Communication:** Incorporating a visit to the senior center emerged during a conversation with the center director as we sought ways to pluralistically probe the internship outcomes. She lamented that researchers interview her members about their health needs “all the time”, but never come to talk about fun or social aspects. She also mentioned that older adults love it when young people visit as it livens up the center and reduces the stigma associated with such places.

## 5 METHODOLOGY

This paper is based on the firsthand experience of the first and fourth authors’ developing and teaching CivicDIY. The data collected includes 38 hours of observations, dozens of textual and design artefacts generated during the internship, 7 semi-structured interviews with the students conducted a month after the program concluded, and audio recording of the final presentations at the senior center. We took extensive field notes during class activities, field trips, and informal conversations. There were generally

three types of observations in these field notes: (1) summary of student ideas, proposals, questions, and opinions, (2) details of their reactions and ours to the activities and interactions during the program, and (3) the way they interacted with each other, the research team, and the older adults. Participants gave consent to be audio recorded, during the informed consent process, as approved by our institution’s IRB.

The first author transcribed the audio recordings and imported transcripts into QDA Miner Lite for coding and thematic analysis. The first author, fourth author, and a research assistant then independently read each transcript, assigning a code to every sentence (open coding), focusing on interactions, design processes, and perceptions. Example codes included “creative freedom”, “conflicting visions”, and “functional redundancy on the island”. Once consistent codes began to emerge, we drafted the first round of codes and tentative categories such as “fractious encounters and backlash” and “physical change is disruptive”. We then reflected on the codes, discussed our different perspectives on how the youth appropriated civic design, and conceptualized preliminary themes around agonism and unmaking through reflexive thematic analysis [14]. At this point, the themes were read alongside and compared with theories of agonism based in the literatures described above – specifically Mouffe [73] and DiSalvo [22]. The chosen themes were further supported by triangulating evidence from fieldnotes and student artefacts and discussing them with the research team through the lens of agonism. After three iterations, the themes of “agonistic encounters” and “designing with (un)making” were agreed upon and were further iterated and refined along with the codes.

### 5.1 Positionality Statement

The first author (and primary field researcher) is a Middle Eastern female with research experience in urban planning and design. Prior to CivicDIY, she had worked with youth, but in settings that left little room for defiance. This inexperience with the youth independent spirit, coupled with her professional training in architecture and engineering (two fields structured by expert knowledge in systematic ways), and a cultural upbringing focused on compliance and hierarchical structures, impacted the first author’s approach to this project in two ways. The first is by trying to bring youth back on a normative design trajectory she felt might appease the island community best (as narrated in section 6.2). The second is by sensitizing her over the course of data collection and analysis to the youth process of claiming voice and agency as experts on their needs, the value and ramifications of that, and the emancipatory essence of agonism. The second, third and fourth authors are faculty members at U.S. universities with many years of experience in design, HCI and STS. The fourth author is also a South Asian male with extensive experience designing and running informal education programs for youth. He was therefore familiar with program plans going off-course by youth claiming design agency. Only the first and fourth authors were involved in co-designing CivicDIY and the social studies unit preceding it, co-teaching the two programs, and collecting the data. Both were residents of the island when the program and study was conducted.

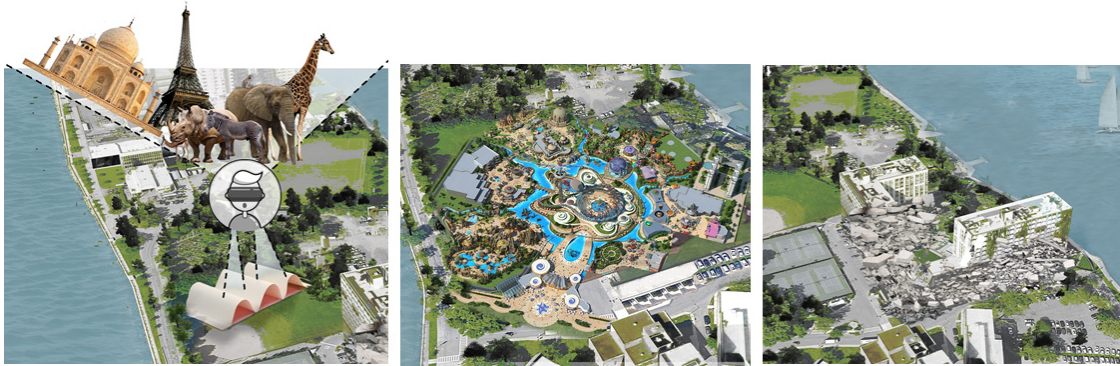


Figure 2: Youth proposals rendered on the Pinnacle (an alias for an island condominium) site: virtual reality zoo/cultural center (left), spa kingdom (middle), and destroying the Pinnacle (right). Renderings produced by authors

In the following two sections, we narrate the internship process chronologically, focusing on two ethnographic episodes: 1) the students' design proposals, and 2) their presentation of these proposals at the senior center. After each episode, we discuss the key observations and findings that resulted. In the subsequent sections, we synthesize the themes and ideas appearing across the episodes, and their implications for design theory and pedagogy.

## 6 EPISODE 1: DESIGN PROPOSALS

In the early ideation stages, the youth proposals revolved mostly around tech-based artifacts such as smart flying pencils that sharpen themselves for kids with disabilities, an automatic chair with luggage storage for older adults, and a headpiece with auto-translate chip for English language learners. Eventually, as the youth gathered more site data from the island, worked on their ideas collaboratively, and got feedback, they converged on more place-based and civic ideas that from their perspective enhanced social cohesion on the island. The final designs that the youth converged on were:

- **VR Zoo:** Usama proposed a virtual reality zoo in the park (Figure 2) accompanied by a garden and playground for those who are too young to enjoy VR. Everyone would wear the same goggles in the zoo but sees animals appropriate to their age (e.g. children under 10 only see petting animals). The goggles could also show cultural attractions.
- **Spa Kingdom:** Layla's project (Figure 2) proposed replacing the Pinnacle (an alias for a luxury condominium on the island) with a "spa kingdom" similar to a one she visited in the past with multiple pools, saunas, food, and race cars for kids.
- **BMX Park and Mall:** Maha proposed a two-story BMX complex with roller coasters, water slides, shops, and restaurants.
- **Underwater Train:** Khalid proposed an underwater train to a tiny island north of our island, with opportunities for snapping pictures of the riverbed and skylines.
- **Cultural Center:** Ferguson designed the center with both indoor and outdoor spaces for holding cultural fairs in addition to daily programming.

- **Floating Shopping Mall:** Adnan and Aditya proposed a shopping mall floating in the river with an underwater aquarium, a walkway to the island, and a bridge to the mainland.
- **Destroying the Pinnacle:** Adnan and Aditya also proposed "destroying the Pinnacle" (Figure 2) without building anything else in its place. The Pinnacle is a luxury apartment complex on the island with amenities such as tennis courts, gardens, and an outdoor pool. It used to be a mental hospital and now houses the island historical society's office and two residential wings. One of the students, Ferguson, and the fourth author, both lived there at the time.

In the next section, we report on the specific values and aspirations the youth embedded in the design process and final proposals as a response to their urban experience.

### 6.1 Youth Values and Aspirations

The youth showed intimate knowledge of the island's built environment and its residents, knowing for example where dogs got into fights, who smoked weed and where, police routines, facilities conditions, and traffic risks, among many other unique local insights. Research findings reveal that their urban experience is defined by limited mobility, lack of youth-oriented community spaces, and getting "yelled at" by older adults and security for riding their scooters or being too loud. And while the island has multiple swimming pools, playfields, and gardens, they are either private, too expensive, or often rented out as emerged in the internship research cycles and interviews. The youth responded to these challenges with a loud, fun, and expansive set of proposals that frequently challenged the norms of the broader (and older) community. Reprimanded for running, playing, and talking too loud, they proposed even louder activities: roller coasters, swimming pools, and underwater tunnels, as well as destroying the most expensive rental building on the island. In general, their proposals highlight the following values:

**Having Fun:** The youth proposals chiefly target "fun" and "play" within safe social contexts. The mall uses "empty space [the river] for like fun things". Khalid's underwater train adds "activities on the island while also making it a more popular place for tourists". The BMX/mall concoction can "...unite both kids and adults together ... to know each other and have fun..." Usama describes the zoo as a

place where “*you can have fun. You can play here while kids having fun in the kids’ park*”. And Layla dubs her spa kingdom a “*fun and safe environment that is family friendly*”.

**Intergenerational Compromises:** In Layla’s spa kingdom, “*kids can run off and have fun while the parents relax*.” The spa has four swimming pools and two “*are strictly for adults only because kids can get very annoying, I know because I am one*.” Maha’s BMX park incorporates retail so that adults would enjoy shopping while kids ride. Usama does the same through a kid-friendly garden outside the VR arena so that young kids can keep busy while older siblings and adults enjoy the experience. And the mall provides necessities and a variety of food options everyone on the island needs. The proposals would have ample security so that “*parents won’t have to have their kids in the back of their head like oh my god what is my baby doing right now?*” There would be spatial buffers (mall in the river, VR zoo in the park, spa on the spacious Pinnacle land) so that residents won’t go “*are these kids screaming? I’m trying to sleep*.” The proposals are also all located away from our institution because “*college students need to concentrate*”.

**Social Justice:** With high rent and gentrification driving away the middle and lower class from the historically mixed-income island, the youth reported that more and more of their classmates were leaving the island school and relocating to more affordable neighborhoods. The youth communicated that concern through a range of moves: Aditya and Adnan kept teasing Ferguson because he lived in the Pinnacle but “*doesn’t have to pay rent*” (as it is covered by his parents’ job) and criticizing the Pinnacle for its “*really rich*” and “*exclusive*” vibe. When they pitched destroying the building as their design proposal, several other students either tacitly or explicitly endorsed it. The youth also noticed that “*there are a lot of apartments on the island*”, whereas fun spaces for them are non-existent, so it is only fair that their priorities are taken into urban planning consideration. Usama comments: “*these students [referring to himself and his classmates] know how to change the world because they are the future and these generations [adults and older adults] will be over age and they won’t be able to control the world. So it has to be us who make the world better and better*.” Layla echoes this sentiment in her interview, noting that “*there’s a lot of adults but the amount of kids that are on this island are a lot... I feel like that’s something that’s so important nowadays: letting kids, because we’re the future, so it’s like you need to let younger people speak*.”

## 6.2 Civic Design Turns Agonistic

The design encounters with youth speak to the dynamics identified in some of the theoretical literature on civics. Lefebvre laments the detachment of civic engagement from everyday life and its confinement to privileged moments of lucidity or action such as voting and public debates occurring infrequently and by invitation from political institutions [61]. The youth proposals reflect a different form of civic participation, rooted in their daily urban experience, aspirations, and values rather than “*socio-spatial norms*” [109], or what is considered right by authorities or “*good*” in our view as design researchers. Through the bricolage of their proposals, the youth accounted for the community’s intergenerational and polyethnic makeup by including activities for others, and by providing for security and spatial buffers. They articulated how

they “*want to live collectively*” [91], including with parents, older adults, the local police, as well as the government and other civic institutions. But their articulation, in the form of entertainment and adventure venues, shift from civic to agonistic design by passionately challenging what “*does not fully appear*” in the current pattern of rules, institutions, and customs and makes a case for why it must be recognized [10, 76, 80].

The youth started out shy, expressing trepidation about what they could propose since they were “*just kids*”, and opting for de-contextualized tech-based ideas. Through research and design iterations, they quickly realized that they spent a lot of their time on the island and possessed unique lived expertise on it. During the mapping exercise alone, they shared over 60 insights about how the island is used and governed, such as the frequent closure of public sport fields for private rentals. This placed-based knowledge recentered their focus from gadgets to urban-oriented designs. It also bolstered their confidence, propelling them to seek agency as young citizens by designing based on their collective top priorities: socializing and having fun.

This prioritization clashed with our own goals for the program, which implicitly supported more subdued, formal, and adult-centric ways of social interaction. The youth resisted our implied priorities with insubordinate behavior (e.g. refusing certain feedback or tasks), persisting with the destruction proposal, and building coalitions among themselves. Subversion reached a critical junction when the fourth author (also the PI on the project) was out of town. The first author ran the weekly session, and prepared CAD plans to build a physical map of the island as agreed upon the prior week. The youth refused to build the model, choosing instead to proceed with prototyping their individual proposals. Even Usama and Maha, who were generally agreeable and diplomatic, politely turned down the task with “*perhaps later*”. And they bypassed the feedback that an outdoor forum at the island’s transit hub might be more usable than a VR zoo or BMX park.

The first author called for an urgent team meeting to discuss the lack of exemplary “*performance*” the youth showed in our prior school project with them. She wanted to deploy “*compliance*” mechanisms such as introducing grades and sending reminders to parents. She argued that the community needs doable interventions while “*we are wasting resources on these ... kids ... to produce ... privileged interventions that are useless for the island! How are we even going to take that to the senior center?*” The fourth author (the PI) however saw no problem in the youth deviating from planned course. Unable to resolve the conflict, we discussed the motivations behind the youth adversarial trajectories and the values embedded in them. The fourth author noted that the youth had valid concerns which they voiced many times over the course of CivicDIY: busy guardians, limited amenities on the island, lack of opportunities to express their funds of knowledge [41], and absence of social contexts to express their identities. He offered: “*Look, we can incorporate that [compliance mechanisms] here if that’s what you want...but do you want a school or do you want a third space [100]?*” The first author eventually accepted to “*stay with the trouble of ... representing the lives of people in the community*” [97]. At that point, it became a sub-community: the youth’s.

Layla celebrates their claimed sense of agency as young citizens: “*we got to look at the island, see an overview of the island, say things*



*we could take out or put in, so we got that all based on our point of view and based on what we wanted. And we got to do our projects all like based on our opinions.*" This agency led to agonistic encounters across multiple fronts: within the organizing team, between the youth and the organizing team, and between the youth and their families (one of the youth recalled a family member reacting to her proposal with *"oh I don't think you should create a roller coaster and shopping mall"*). As we shall see in section 8.3, it also led to conflict between the youth themselves as support for destroying the luxury condominium / historical landmark (where both Ferguson and one of the organizers / authors lived) was not unanimous.

## 7 EPISODE 2: PRESENTATION AT THE SENIOR CENTER

Throughout CivicDIY, the youth mentioned seeing a lot of older adults on the streets (including sometimes getting yelled at by them for being loud), but not often directly interacting with them. To address this intergenerational and intercultural gap, we arranged for CivicDIY to culminate with youth visiting the center to interview the older adults about what the island meant to them as a home and to present their design proposals. There was no prior engagement with the older adults as CivicDIY was an internship for youth to learn and execute design, rather than an intergenerational internship or a public design initiative. In hindsight, the older adults not being involved in the design phase led to honest responses unfiltered by "performance" [40] or conviviality [91] norms.

The senior center director advertised our visit a week prior through a flyer and word of mouth and circulated a signup sheet. A total of 11 signed up and eventually 9 attended, including 8 female and 1 male. Attendees came from a wide range of ethnic and income brackets. Some of them had lived on the island for decades and were fairly involved with its governance. They also experienced firsthand its urban transformation (including various speculative proposals the city considered in the 1960s and 1970s for the island) and provided us with historical material on that which we taught during CivicDIY. While the older adults were not present during the program's research and design activities, many (especially the ones who were most vocal during the visit) were familiar with that legacy of speculative designs, provocative ideas, and the island history, including the prior loss of several beloved island buildings.

On the last day of CivicDIY, the youth practised their presentations in our lab. Then we walked to the senior center, set up snacks, sat around a table, and introduced ourselves. As an ice breaker, the youth individually interviewed the older adults for about half an hour about what home meant to them. After this, each team presented their design proposals for the island (Figure 1).

Adnan and Aditya volunteered to present first, proposing the floating shopping mall with an underwater aquarium. The older adults probed them on the engineering and policy challenges. To our surprise, Aditya then declared wanting to destroy the Pinnacle. In the ruckus that followed, the loudest voice was an older adult (a member of the island's historical society) exclaiming: *"Excuse me!! What's your problem with the Pinnacle?...[our campus] has lots of land... Don't fool with my lunatic asylum!"* The pair nonchalantly responded: *"We don't like it. Everything. It covers a lot of space."* Still

taken back, the older adult followed, *"well what do you want to build in its place?"* The response came: *"nothing..."*

Layla was more diplomatic in her presentation, noting that she has nothing against the Pinnacle, but that it did occupy a lot of space that could better be utilized (in her opinion) by providing a spa kingdom that would help adults relax and keep kids from loitering and getting in trouble. The older adults again suggested it should be built close to our campus to keep it and its noise away from the buildings where they lived. They also suggested additional functions: *"How about ice skating? Seniors would love that [laughing at their own suggestion]"*

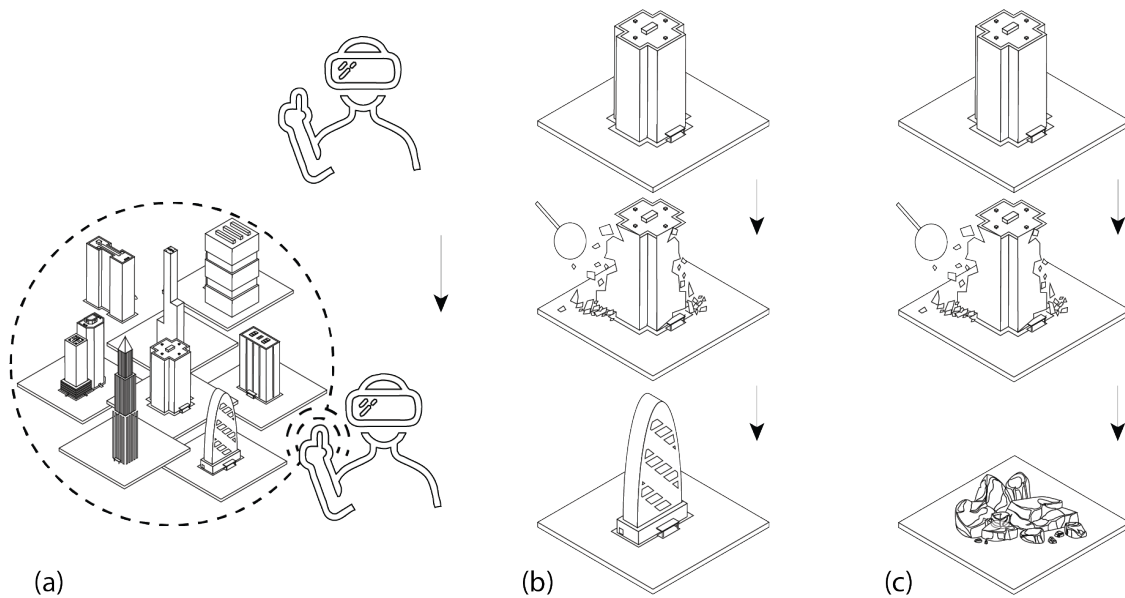
When Khalid, the last youth presenter, gave his presentation about the scenic tunnel, the older adults, perhaps still annoyed by the first proposal, diverged from the idea with a discussion among themselves about the technical challenges it entails and its relation to the river's geological history. One of the youths recalled in his interview feeling *"a bit afraid"* before the visit *"because they are way older than me, it'd be a bit hard for me to show people what I'll expect the world after the next generation."* The presentation validated that suspicion.

The most popular proposal by far was for the VR zoo. Usama opportunistically expanded it during his presentation to also include a virtual cultural center/museum. This on-the-fly adaptation encouraged the older adults to reminisce about places they grew up in or visited, naming landmarks that could be visualized, and the need to augment the VR system with a sense of smell, because *"Bombay and Paris do not smell the same!"* Unanimously, they described it as *"very good"* and *"excellent"* because then *"you can represent everybody's hometown"*. They even joked that *"the 5 year olds will go to the 25 year old [scary zoo] and the 70 year olds will go to the 5 year olds [petting zoo]."*

### 7.1 A Fractious Encounter

Post-event interviews with youth reveal backlash from their interaction with the older adults, and an expressed desire to work with a different demographic in future internship offerings. In commenting on the encounter, Aditya recalled that the older adults *"got mad when I said I'd destroy the Pinnacle and then they said that there's no need for the mall... because it'd just disturb them. It's [the mall] just sitting in the middle of the river and ruins the fact that there's a river there. They didn't get my vision...it was kind of weird [the visit] because; it just wasn't fun. I don't really know how to describe it... The people were fine, just what they said was kind of bad."* Khalid, who was excited that he would *"get good feedback and a different perspective,"* reported his subsequent disappointment since the older adults focused on the technical and historical aspects: *"I didn't really get any feedback. They just said good job and I asked is there any changes and they were just clapping I was like oh god no. I didn't get anything."*

In attempting to explain the friction, Khalid further noted that the *"elderly want something more peaceful; children want something fun; adults want something beneficial, and tourists want something that looks good. They each have different perspectives."* When asked if we should do this again at the senior center, all of the youth said no, suggesting tourists, young adults, and our students because *"they understand like everything and don't oppose things because*



**Figure 3: The (un)making strategies underlying the youth proposals: (a) making in virtual reality, (b) making with implicit unmaking, and (c) critical unmakings**

they don't have connection with the Pinnacle, so they won't have an issue with destruction if it benefits them." Ultimately, all youth recommended removing the senior center visit in upcoming years and focusing instead on interviewing younger demographics who would appreciate their visions. We held a follow-up session with some of the youth a year after the encounter. They still held the same sentiment and opinion, saying they could go to the senior center as volunteers, but did not want to do interviews or present their own ideas.

## 7.2 Agonism within Heterogeneous Publics

CivicDIY served as an agonistic context [10], through which youth chose to conjoin due to concerns around competitive high school applications, spending the summer in "math academies" as one participant noted, and being left out of the urban narrative defined for their community. Difference within the youth assemblage comes from many sources including ethnic, religious, and class diversity, fueling the controversial desire to destroy a classmate's home. Another assemblage was the youth-older adults, which we helped bring together due to both sides feeling excluded from urban issues and wanting to "see more things from other people's perspectives." The older adults cherished quiet, nature-permeated, non-touristy, and relatively static neighborhoods, while youth wanted fun, stimulating and dynamic places. The older adults, many of whom were immigrants, saw the island as a haven that should stay as is since it is already "way, way, way better than where they originate from" as Adnan put it. They were predictably resistant to any proposals that advocated for rapid or destructive change, much less the destruction of a notable and important local historical landmark. These underlying differences in perspective and priorities became agonistic once materialized, because they candidly allowed conversations, concerns, and deep reflections to surface about what it means for

different community groups to share urban contexts. As Latour reminds us, issues of concern bring people together more than "any other set of values, opinions, attitudes or principles", but *things* expressing these issues give rise to "new occasions to passionately differ and dispute" [59]. This is what makes CivicDIY encounters *agonistic conflicts*.

The youth in this program came up with three different ways of using design to create things that can surface and address underlying difference. Usama responded to the uncomfortable tension around the provocative proposals and the older adults' reactions by constructing a virtual reality expandable to everyone's needs. Aditya and Adnan reacted to difference with "a different kind of politics" [13], while the others relaxed the reigns of reality and opted for speculative and spectacular proposals. What is common to all was that design was being used to *do politics*, or in other words, *the work of agonism*, but in methodologically distinct ways.

## 8 THREE FORMS OF (UN)MAKING

Some of the dynamics described in sections 6 and 7 can be attributed to the varying (un)making approaches the youth leveraged (Figure 3) and were brought to the fore as the friction and conflict revealed in the stories above. The youth proposals encompassed three (un)making forms - these forms are just strategies that we observed and are *not taxonomies nor typologies*. The first strategy was making in the realm of virtual reality, which is common in HCI and the information and computing industries more generally. Through this strategy (exemplified by the VR zoo), something new can be added to the social environment without necessarily affecting other people's experience of it. The next strategy was making with implicit unmaking. This is a common strategy in "traditional" design fields like architecture and product design. In these proposals, the youth all suggested making something new for the island,

which implicitly requires that whatever existed there previously would be “unmade” to make room for it. These proposals did not however receive the same level of scrutiny and critical feedback as the proposal to destroy the Pinnacle. The last was critical unmaking, as embodied in the proposal to destroy the Pinnacle. The suggestion to explicitly unmake an object from a shared social environment garnered predictably conflictual responses and was the most provocative move that the youth employed in CivicDIY. In the next sections, we reflect on the tension between critical unmaking and other ways of seeing and doing in design, and how that tension can be productively leveraged pedagogically and methodologically.

### 8.1 Making in Virtual Reality

Usama conceived his virtual zoo idea after seeing animal origami models in our fabrication lab. He envisioned the zoo as an outdoor park activity (with or without a physical structure) in which rental VR headsets would offer a petting zoo for young kids and a scarier zoo for older kids. Usama was always conscious of the intergenerational and “consumer” aspects of his zoo, making sure there was something for all tastes and abilities. Usama’s sensibility to consider and respond to diverse perspectives was demonstrated when he cleverly augmented the zoo on the spot during the presentation at the senior center, framing it as a virtual space where a multitude of cultural activities could happen. Capitalizing on the seemingly infinitely flexible affordances of virtual reality, he was able to promise everyone in the audience whatever they desired: rooms with nostalgic memories for those who were from France, India, and Libya, arenas with age-appropriate interactions with animals, as well as rooms tailored to other interests and cultures.

This made everyone happy without causing friction around limited space or conflicting needs. We recall a question encountered often in CivicDIY discussions: “*Whose island is this?*” The response, provoked by making in virtual reality, was collective dreaming along the lines of the infamous “you get a car, and you get a car, everyone gets a car” from the Oprah Winfrey Show. The island could be everybody’s, whatever they wanted it to be without disrupting or destroying what is important to others. In promising something that would work for everyone without taking up space or destroying existing property (akin to what virtual land trading platforms such as Earth 2 [1] promise), this form of making garnered a unique and unanimous positive reaction from the audience.

### 8.2 Making with Implicit Unmaking

The bulk of the youth designs proposed physical interventions such as a spa kingdom, underwater train, floating shopping mall, BMX park, and cultural center. These ideas provoked discussions with the older adults about the exact activities, parallel visions proposed for the island in the 1960s, potential incompatibilities with the island’s quiet residential vibe, and feasibility prospects (given the river traffic for example). Unlike with the proposal to destroy the Pinnacle, the older adults did not contest what would have to be unmade to make room for these proposals. In fact, the Pinnacle occupied the chosen site for both the BMX park and the spa kingdom.

We suggest that this is because the focus of the discussion was simply on what to be made (and how it would be used, maintained,

secured etc.) rather than what would be implicitly unmade. Humans instinctively venerate creation, so any necessary unmaking often “goes by unquestioned, unexamined, unchallenged” [35]. Philosopher and design theorist Tony Fry notes that making and unmaking are entangled in a “dialectic of sustainment” [35]: anything that comes into being (visions, functions, pleasures, norms, and dreams) simultaneously destroys (habitats, resources, attachments, or other dreams). Everything is therefore situated within a dialectic of sustainment. But we are “mesmerized by the making and most often oblivious of the unmaking” [89], so we valorize one side of that dialectic. Such oblivion is handy: it keeps the focus of designers, institutions, and societies at large on “making” visions while the accompanying (invisibilized) unmaking dissolves existing objects, orders, or structures [89].

One of the youth, Khalid, deduced the two facets of this dialectic during the follow-up interview: “*the island is too small there’s not much that you can really do. The only things that can be done we’d have to destroy something and then people don’t want that.*” Unmaking was all around us in these “making” youth proposals, just as it is in design, epistemology, politics, and economics. The reason destroying the Pinnacle was unusual is because the focus was on the unmaking facet – so solely and uncomfortably that the conversation could not be diverted to the post-life of the site or what would be made instead. In this second form of (un)making, as the focus remained on making (which is the inherent inclination of humans and design), the questions and reactions provoked among the youth at the senior center were not as fractious.

### 8.3 Critical Unmaking

During the mapping activity, Aditya suggested, “*how about we destroy the Pinnacle?*” Adnan responded in a faint voice, “*yeah... I hate the people there.*” From that point on, “*it stuck,*” as the pair notes. Our initial reaction to their proposal was: “*where is your design?*” To us, trained designers, their idea seemed lazy, frivolous, and devoid of novelty. We communicated our misgivings by asking for an “actual” design, for something “new”. They obliged by designing a floating shopping mall. But throughout, they maintained allegiance to their proposal to destroy the Pinnacle, repeating it in every class, promoting it to others, and passionately advocating it at the senior center.

There was clearly both interpersonal strife, as well as socio-economic concerns, that underlined the division between Ferguson (who lived at the Pinnacle), and the rest of the class. When probed for the motivation behind the proposal, Aditya declared “*I think they should not live there... I don’t really like it; I don’t really like the people that live there. It’s everything that I don’t like.*” Maha also supported the proposal, explaining their stance as “*... going against Ferguson. it was 100% against Ferguson. Whatever Ferguson was working with, we hated that... Like Ferguson’s project sucks (but even though his was one of the best ones)*”. Layla agreed: “*Aditya had the thought of destroying Ferguson’s place where he lives because he wanted the hatred of it. I thought it was a good idea because I was like the Pinnacle, it’s big but really... I just feel they use a lot of space for a limited amount of people and that’s the vibe they want, really rich, yeah, exclusive. I feel if we took that out, we replaced those people [with community-based functions]... sorry you just don’t have a home*

now, we bought it out or something, I'd take that out, I'd take out the tennis court and all those stuff..."

Conflict around the Pinnacle destruction reached a climax at the senior center. The proposal evoked a different valence by openly threatening to take away something that some island residents called home or cherished for its historical significance. It was provocative and destabilizing in a way that the other proposals were not, enough so that some of the older adults came to us after the presentation concerned with what "all that talk" to "blow up" the Pinnacle was about. We reassured them it was mostly a joke and not something that anyone was actively pursuing. Such unmaking, which is when "material and/or imaginary elements ... are unintentionally or deliberately, temporarily or permanently, divested, damaged or even destroyed" [16], cultivated a fractious set of social interactions across several fronts. It set off struggle "between use and exchange values, between those with emotional attachments to place and those without such attachments" [103]. And while some elements of this proposal may have been driven by typical interpersonal adolescent conflict, it surfaced deeper concerns about the island and its challenges.

## 9 DISCUSSION

Episodes 1 and 2 described how the youth design process and resulting artifacts acted as provocations that led to agonistic encounters among the youth and between the youth and older adults. The episodes' synthesis (section 8) then identified critical unmaking as one of the design strategies the youth leveraged, contrasting its affordances to normative, and more amiable making strategies that do not require (or foreground) unmaking. In this section, we argue that the unmaking seen in CivicDIY is under-theorized as it stands in HCI, and that it needs to be recognized as an explicit design move when designing for agonism and provocation. We structure the discussion as follows: first, we describe *what* critical unmaking is (such that it does not fit with current unmaking imperatives in HCI). Next, we make a case for *why* we should recognize critical unmaking when designing for agonism specifically or provocation more generally. Lastly, we offer insights from CivicDIY on *how* critical unmaking can be fostered in (pedagogical) design contexts for provocation and agonism.

### 9.1 Making Unmaking Critical

Design arises when "a deliberate and directed approach is taken to the invention and making of products or services to shape the environment through the manipulation of materials and experiences" [22]. Design is then driven by invention and making, and commits variously to realizable solutions, growth, value generation, and user or consumer appeal. HCI has tended to privilege making, but designers and researchers in the field are starting to engage the act of unmaking [54, 78, 81, 85, 93, 105], proving its potential for creativity, learning, and production. Their unmaking works often by centering material ingenuity, the crafty nuances of dissection, and the creative opportunities disassembly affords in lab, factory, or design contexts. They posit unmaking as an "extension" to making [93] and a way to recover material for reuse [78]. They unmake (objects, materials, technologies), while simultaneously making,

by breathing "new life" into broken objects through creative re-assembly [53, 54, 110] and developing novel material properties [78]. They compose vocabulary [93], garner generative interactions around physical de-fabrication [29], reduce environmental and societal harms [63, 81], and articulate techniques for moving on and letting go [88]. Further, they suggest comprehensive tools, methods and concepts to achieve desirable and predictable goals such as saving the planet and expanding design horizons. In other words, unmaking works in HCI entail both sides of the making-unmaking dialectic. And they render unmaking, which is "deemed to be de-motivating, bad news, politically unpopular, negative etc." [35], *palatable* by combining it with making, and imbuing it with novelty, innovation, and problem solving.

What if we considered unmaking on its own ground, on its own terms, unobscured by any design/making imperatives? This is the realization that Adnan and Aditya forced: unmaking that is explicit, not folded within a making agenda, and without promising or negotiating anything new or shiny (since the pair wanted nothing in place of the Pinnacle). The design move of making unmaking *explicit* generated a proposal that tested what we know or view as design. From our perspective, the proposal was unusual yet banal, unrealizable (for the time being due to the Pinnacle's status and historical significance) but not speculative. It was confrontational, leaving no room to avoid or downplay conflict, and sobering, stirring up existing but under-discussed distribution and allocation disparities. The outcomes were unpredictable, raising sides and winning both passionate support and jarring opposition.

Initially, we dismissed unmaking as a legitimate move, as it was done on its own terms, and did not conform to the values or methods we had been trained in as designers. Over the course of CivicDIY, analyzing its data, and writing the paper, we have come to recognize critical unmaking as a design move. It had no "making" or "invention" aspects but it was "a deliberate and directed approach" [22] that shaped the course of discussion and conflict, and did the work of agonism. It cannot be folded within existing unmaking practices, which entail making, production, and novelty as argued above. As such, we propose critical unmaking as a new move to expand the repertoire of tools for contention and provocation in HCI, including in ways that may open up participation to outside groups that may be more limited, trapped or foreclosed by more conventional understandings of design.

### 9.2 Provoking Questions, Concerns, and Contestations

The simple observation that critical unmaking could be used in a design context led to a cascading set of assertions, conflicts, and social realizations. The youth pitched an irreversible and uncompromising proposal in the presence of Pinnacle residents and older community members. Unmaking helped the youth rhetorically *assert* their interpretation of urban priorities in the presence of an audience (the older adults) that was already critical of their loud behavior on the island, thus deriding any chance of "rational consensus" [73]. The provocative proposal left no room for each participant, as Goffman states, to "suppress his immediate heartfelt feelings, conveying a view of the situation which he feels the others will be able to find at

least temporarily acceptable” [40]. The social veneer of consensus was thwarted and *conflict* ensued.

Throughout CivicDIY, we kept asking why Aditya and Adnan adopted that proposal. As we observed and probed it with the youth and older adults, the conversation took a different and heavier trajectory that led to several critical realizations. It went from day-to-day urban nuances to limited land resources and rent rising with every new condominium in the historically mixed-income island. It foregrounded the financial burden many felt (including youth) and the undesirable change of friends and classmates “*disappearing*” from the island school as their families move elsewhere. The questions that were raised surfaced long-running disparities and tensions - including who dictates the timescape of change on the island? What is more important, the historically recognized or the functionally relevant? And how does one react when their connection to home (island or Pinnacle) is threatened?

Looking back, critical unmaking offered a way for youth to step up “from below” [66] to confront adults who had far more say about the future of the island, and in ways unavailable through the more “makerly” strategies that our design activities had originally anticipated (and that other participants more readily conformed to). They used it as a tool to radically contest gentrification, a phenomenon they experienced, did not know its name, but enunciated through design. Seeing no possible resolution, but riven with hope and trepidation about a more equitable future [70], taking down the symbol of luxury and exclusivity on the island seemed like the only way forward. Compare the frictions, tensions, difficult discussions, and sobering realizations that emerged with unmaking, to how a more conventional approach like making in virtual reality was able to set out a “polyphony” of recreational chambers to make everyone happy, and to dissipate conflict before it could even manifest. From this perspective, unmaking was a more successful design for provocation than making. It supported agonism but in ways that were: (1) less socially safe (since it left no room to evade conflict), and (2) less optimistic around whether a shared consensus or resolution could be reached. This made it uncomfortable for all involved. But what destroying the Pinnacle lost in amiability/conformity/palatability, it gained in provocation.

### 9.3 Fostering Unmaking and Agonism

Conflict, friction, and unanticipated politics inevitably arise in design and CS education contexts as many scholars have noted [2, 21, 70, 98, 99]. Agonism generally and unmaking more specifically could therefore be promising approaches for PD, YPAR, and pedagogical CS interventions that do not shy away from dilemmas nor seek to impose resolutions. Through CivicDIY, we learned that there are aspects that must be tended to in such contexts. First, unmaking and agonistic practices must be *protected*. Second, participants in agonistic encounters need to be *cared for*. Lastly, the affordances of unmaking and agonism need to be *considered* given the possible “complications” [2].

Agonism can emerge organically from participants’ interactions as it is an inevitable aspect of human co-existence [73]. However, it is easy to suppress given our inclinations to optimize for consensus and avoid dissensus in the social “performance” we always put on

[40]. CivicDIY was not established at the onset as an agonistic program - but it shifted into one where subversive action, risky design strategies, and oppositional encounters with outsiders helped youth invent counter discourses and test their ideas against the reigning reality. In section 6.2, we described wanting to bring the youth back on track and achieve the goals we set for the program. Due to the observed conflict amongst the team, we paused to look beyond the immediately obvious situation and reflect on the motivations behind the youth behavior and values embodied in their proposals. Once we moved from “what” the youth were doing (or not doing) to understanding the “why”, their provocations flourished, and agonism took its course. Friction emerged as a resource. In our case, a solution-driven empiricism threatened to sweep unmaking and agonism under the rug. Protecting them entailed *pausing, reflecting* and then *compromising* on the program’s original goals. But it also involved a simple willingness to live with the discomfort of conflict – an effortful act to “stay with the trouble” [97] rather than planning, or negotiating, or designing it away.

The second aspect to tend to when fostering unmaking and agonism is care. Embracing the egalitarian social practices of agonism allowed fractures between the co-authors, among the youth, as well as between them and the older adults. But agonism designers and scholars do not speak about the care or recovery needed after such encounters. From our experience, recovery is essential, as conflict is hard emotional labor. Fractures surfaced the very real unamiable reactions due to the uncomfortable tension arising when threatening ideas are introduced in material form. We had to put in the delicate work of mediating oppositional groups (and our own discord), and carefully placate, translate, and emphasize the need for respect and seeing the world from the vantage point of others. Further, the youth had been classmates for a while at that point, and their internal conflicts did not seem to bother them too much. But they needed to vent about the senior center encounter afterwards, reflect on it, and *arrive at some form of closure that their ideas were not received with unanimous approval*. The semi-structured interviews and follow-up focus group served the auxiliary purpose of reflecting on the conflict, accepting that consensus is not always possible, and moving on to other ways they could and would rather interact with older adults.

The last aspect to consider is that while unmaking and agonism can be powerful, they remain both underexamined and open-ended, in both HCI theory and the concrete situations in which they arise and are practiced. An effective assessment of these practices will require realistically considering how many “complications” (to borrow the term proposed by Arawjo et al. [2]) organizers and participants can handle. Agonism scholars advocate that embracing conflict is a way to prevent violence from erupting in the first place [73], but they do not provide guidance for when conflicts potentially turn into violence or aversion. As a rhetorical provocation (which is what we saw in CivicDIY, not the actual destruction of the Pinnacle), critical unmaking surfaced real conflicts that making and more productive/constructive/agreeable approaches to design did not. That is what the critical project in HCI sets out to do. *But what if it had gone further? What if the conflict got out of hand? How much of a shared strata of “ethico-political values” [73] and “gripped teeth tolerance” [18] can we assume participants have? What are the modes of voice and expression that go too far, that break, rather than*

*extend and deepen, the nature of the design (or indeed democratic) encounters? As we foster more fractious design moves, we cannot evade these questions, nor whether it is in our capacity as designers and educators to instill ethical, material, and emotional “guardrails” that might be needed to keep unmaking and agonistic processes (and their human participants) intact and on track. Further, we must acknowledge that the discomfort or potential violence arising from agonism and unmaking can afflict some participants (e.g. minorized or marginalized groups) more than others. Lastly, these mechanisms might require acknowledging and establishing from the onset that some conflicts can never be resolved (in ways that some more polite and consensus-oriented projects may be less inclined to do). We were not as successful at this, given that the youth repeatedly expressed aversion that they never wanted to present their ideas again to older adults (but could go as volunteers). At the same time, we all (especially the youth) gained the very real knowledge that not all community needs are reconcilable, and not all design provocations entail predictable/desirable/realizable solutions. In hindsight, it was worth it - but considering potential complications (including in light of dynamics such as power, gender, and race) beforehand is never a bad idea.*

## 10 CONCLUSION

In this paper, we showed how design gave youth, a demographic commonly excluded from agonistic design case studies, a channel to express their desired visions, and to contest undesirable alternatives. It allowed articulation of youth priorities into a material form that can be shared with and critiqued by others, surfacing difference and conflict in the community. We probed this conflict created by design as an active site of learning, reflection and sense-making. We discussed how youth responded to the conflict and how this conflict shed light on larger intergenerational questions around housing, gentrification, and demographic change. We contrasted the fractious response of older adults to some of the youth proposals, particularly the destruction of a luxury condominium where both one of the students and research team members lived, to the nearly unanimous support for the “virtual reality zoo”. Finally, we used these examples to illustrate how normative approaches to design did not surface the underlying tensions and discussion that critical unmaking was able to do. By recognizing critical unmaking as a legitimate move in design, we hope to expand the repertoire of design moves available to designers and participants as they seek to challenge authority and injustice through their critical work.

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