Thanks, I'm Matthias Korn. With this research, we address the question of **how to** enliven and provoke civic engagement (CE) in everyday life. We analyze previous efforts to designing for CE along **two dimensions**: the everyday-ness of the engagement fostered and the underlying paradigm of political participation. Centrally, we call designers of civic engagement to create friction—to make people reflect on and question issues of public concern in their immediate living environment.
Civic Engagement in HCI

Supporting civic engagement from within or without the political mainstream

CE concerns individual and collective actions that identify and address issues of public concern. In HCI, some researchers work within 1] mainstream politics to improve the efficiency of e-government services [6, 73]; to improve access to voting [22, 69]; to seek feedback from citizens on public planning issues [24, 42]; or to foster dialog among citizens and with the state [5, 41, 65]. Other researchers work to foster CE outside of the political mainstream, supporting the work of activists, protestors, and grassroots movements [2, 18, 35, 37, 51].

Individual technologies of CE are enabled by many different, interwoven, and complex socio-technical infrastructures [37, 47, 52, 68]: Not only networks, websites, mobile phones, voting machines, and debate forums, but also various administrative roles and positions, laws and regulations, established procedures and conventions that support and enable various civic involvement methods.
Dual Challenges of Infrastructures for Civic Engagement

a. provoking people to engage in the first place

b. invisible, ready-at-hand character of infrastructure
   • create complacency, stasis, and disempowerment
     (Mainwaring, Chang, & Anderson 2004)

Yet, infrastructures of CE are a particularly challenging site for HCI as there are competing forces at play. On one hand, infrastructures of CE are fundamentally about engaging people; even more so, they may be designed to engage people to enact change. On the other hand, infrastructures are typically invisible; they remain in the background and are taken for granted by their various users [68]. Mainwaring et al. warn that infrastructures, which are so conveniently at-hand, can breed complacency and stasis [52].

Infrastructures of civic engagement, then, must counter not only the challenges of provoking civic engagement through everyday life; they must also overcome challenges of complacency and stasis.
Now, in order to address these dual challenges of CE, we propose the construct of friction—friction as a design strategy, so to speak.

- Anthropologist Anna Tsing [70] maintains that friction produces movement, action, and effect. Friction is not exclusively a source of conflict between arrangements of power; it also keeps those arrangements in motion, moving the negotiation of diverging interests forward.
- Within interaction design, Hassenzahl et al. [30] advocate for designing everyday artifacts following an ‘aesthetics of friction’—as opposed to an aesthetics of convenience and efficiency. Their work suggests to put little obstacles into people’s paths in order to make them stop, wonder, and reflect. Take the key holder Keymoment {LEFT} as an example. It drops your bike keys to the floor as you want to pick up the car keys. Or the lamp Forget Me Not {RIGHT} that continuously closes until you touch it again, requiring a deliberate action and intention for it to remain switched on.

We transfer these concepts to the infrastructuring of civic engagement. We believe that frictional design can expose the diverging values embedded in infrastructure, or values that have been ignored during its design. We also think that frictional design can help to provoke people not only to take up more active roles in their communities, but also to question conventional norms and values about what it means to be a citizen.
Now, in order to analyze existing efforts in the infrastructuring of CE, we have developed this framework. In our framework we introduce two cross-cutting dimensions that bring together strands of scholarship about everyday life and political theory.
From *theories of the everyday* by social theorists such as Henri Lefebvre and Michel de Certeau, we identify two perspectives on how everyday political life can be experienced—as confined to {1} ‘privileged moments’ or as integrated into everyday life {2} and experienced as ‘product-residue’.

These two perspectives form the vertical axis of our framework.
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For the horizontal axis, we draw from the political theory of Chantal Mouffe [56]. Based on Mouffe, we distinguish between two contrasting approaches to democracy and political participation—a {1} consensual and a {2} contestational perspective [2, 17, 31].
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Let me explain these two dimensions in more detail, starting with the vertical…
…axis: the two diverging experiences of the everydayness of CE that one may design for.
Focus on Everyday Life

- depoliticization of everyday life
- Henri Lefebvre (1901 – 1991), French Marxist philosopher and sociologist

“Not only does the citizen become a mere inhabitant, but the inhabitant is reduced to a user, restricted to demanding the efficient operation of public services.” (Lefebvre 1981)

Lefebvre warns that everyday life is increasingly depoliticized in modern society. He writes about a decline of citizenship: “Not only does the citizen become a mere inhabitant, but the inhabitant is reduced to a user, restricted to demanding the efficient operation of public services.” ([49]: 753–754, vol. 3)

He argues that the contact with the state, and with others, has become a superficial and apolitical one. Everyday life is too often seen as irrelevant and mundane, whereas it is in fact the space in which all life occurs—where we engage and interact with the state, with corporations, and with others around us—with society.
One of Lefebvre’s main concerns is that civic engagement has been confined to “privileged moments” ([49]: 114, vol. 1)—to special occasions or punctuated feedback cycles on public servants and service provision (elections, public hearings, etc.). ‘Privileged moments’ is the first perspective on everydayness that we delineate. The state, here, extends the privilege to participate to citizens only **when needed and deemed appropriate**—e.g., to improve and refine structures of power with input and feedback provided by users, not citizens.

Consequently, CE is often relegated to the periphery of everyday life and to “specialists in ‘political science’” ([49]: 754, vol. 3) who define structures of power and identify and construct privileged moments.
Instead, based on Lefebvre, we identify a contrasting perspective on everydayness. Lefebvre argues that “use must be connected up with citizenship” ([49]: 754, vol. 3)—that the everyday demonstration of concern for public issues and services is as essential a facet of being a citizen as, e.g., voting or debate.

Everyday life is not merely the stream of activities in which people engage over the course of their days (thinking, dwelling, dressing, cooking, etc.). Rather, everyday life more holistically understood is the product of these highly specialized and fragmented activities, the conjunction and rhythms that render meaning across activities, the whole being more than the sum of its parts.

And further, everyday life must also be understood as the residue, the space between which all those fragmented activities take place, the fleeting moments of transition, what is typically left out and not recognized.
So, whereas ‘privileged moments’ {at the top} understands CE to take place in discrete instances to which citizens may be invited, the combined ‘product-residue’ perspective {at the bottom} understands CE to take place throughout and embedded in the everyday social and political life of citizens.
Ok. So let's transition to the horizontal dimension of our framework. Here, we distinguish between designing for a consensual and a contestational paradigm of political participation.
The consensus and convenience paradigm [on the left side of the FW] emphasizes rationality and consensus as the basis for democratic decision-making and action. It subscribes to the idea that a rational compromise can be arrived at through the deliberation of diverging viewpoints. Proponents of this paradigm include John Rawls and Jürgen Habermas (e.g., [26, 60, 61]; see [55]).

Efforts to foster CE following this paradigm typically aim at improving the mechanisms of governance and at increasing participation of the citizenry. The main concerns of such initiatives center around issues of efficiency, accountability, inclusion, and equitable access to means of ordered expression and action (such as petitions, balloting, or voting).

E-democracy initiatives within this trope often translate traditional democratic activities into online tools for participation (e.g., e-deliberation, e-voting, etc.; see [2]). They seek to retrofit or replace existing civic activities in order to realize established political ideals and maintain the status quo (see [2]).
A contrasting perspective on civic participation understands democracy as a condition of forever-ongoing contestation and ‘dissensus’ [17, 56]. Political theorist Chantal Mouffe has called this ‘agonistic pluralism’ [56]: a multiplicity of voices inherent in social relations that are forever contentious and will never be resolved through mere rationality. Agonistic pluralism sees contestation and dissensus as integral, productive, and meaningful aspects of democratic society.

Designers have drawn from Mouffe’s theoretical position in the form of contestational or adversarial design [17, 31]. Contestational design examines how design can provoke ‘the political’, aiming to challenge beliefs, values, and assumptions. Rather than working to resolve differences through design, contestational design embraces pluralism and seeks ways to engage critically with contentious issues of public concern. In this view, reflection and critical thinking are at the core of civic processes, and provocation and contestation are seen as means to attain these values.
We use this framework to analyze existing socio-technical research within designing for CE. We characterize each of the four quadrants in the design space and provide examples. These four approaches are: \{1\} deliberation, \{2\} situated participation, \{3\} disruption, and \{4\} friction.

I’ll walk you through these four one by one. In particular, our analysis foregrounds friction as a design space of untapped potential for HCI researchers: to provoke CE through contestation in everyday life.
Let me start with our first approach to designing for CE: Deliberation.

In terms of Everydayness, this strand of research understands CE as an explicit invitation for participation that is extended from the state to the citizen. And on the other axis, the focus of design in this quadrant is on fostering discourse among stakeholders with differing viewpoints in order to arrive at some form of actionable consensus.
E-government and e-democracy research has embraced opportunities offered by emerging ICTs to translate offline activities of civic engagement into online counterparts [63]. Novel platforms support the deliberation of civic issues within, e.g., urban planning or public policy [7, 23]. Other systems include platforms for collective decision making, e.g., in the form of e-voting [22, 62]—often as a conclusion to deliberative processes either affirming, rejecting, or choosing among various alternatives.

While this research has been foundational in moving CE online, it still relegates citizenship to the periphery of everyday life, taking place only in privileged moments. We see less research supporting discourse around citizen-originated issues in this quadrant; those discourses are more commonly initiated through everyday, product-residue infrastructures of engagement.
Research that we characterize as Situated Participation emphasizes the in-between, residue aspects of everyday life. Designs in this quadrant target people’s commuting, going about, and everyday curiosity. They seek to only minimally disrupt people’s daily routines in order to conveniently blend civic engagement into these routines.

Research in this quadrant also targets the holistic product of the fragmented activities of everyday life. It fosters productive dialog, community building, and sustained relationships among citizens and with the state. It reflects the consensus paradigm of political participation, because it focuses on citizen input, dialog, and constant feedback cycles.
This strand of research has capitalized on opportunities to embed civic engagement in everyday life through novel networked, mobile, and ubiquitous technologies. These systems resonate with Mark Weiser’s vision of ubiquitous computing by emphasizing technology that dissolves into the everyday [77], interleaving civic engagement between and across temporal, social, and spatial contexts of activity.

**To temporally embed** civic engagement into everyday life, research in e-democracy is leveraging {1} online platforms for **anytime and ongoing** civic interactions and deliberations [6, 11, 38, 73]. Other research **socially embeds** civic engagement into people’s {2} online and offline social networks [16, 28, 53, 65]. And mobile and ubiquitous technologies are used to **spatially align** {3} engagement opportunities with people’s whereabouts in the city and the issues in their immediate environment [40, 64].

Yet, research in this quadrant still frequently considers citizens as users of a city, merely providing input and feedback to the efficient operation of public services and infrastructures.
Next, on the contestational side, research fostering **disruption** provides mechanisms for citizens to reveal, reflect on, and/or call into question the status quo of values, assumptions, and beliefs held by a community. It does so by focusing on ‘privileged moments’ of dissensus, protest, and civic disobedience.
Research in this quadrant has studied the use of technologies during demonstrations, occupations of public squares, and protest actions at sites of interest to the local community [2, 35, 71]. Research in HCI frequently focuses on communication and coordination practices, e.g., concerning the dissemination of protest actions on social media [2, 71], or the coordination work required during decentralized forms of protest [33, 35].

Whereas this contestational strand of research began by supporting individual protest activities and moments of civic disobedience, it has increasingly acknowledged recurring practices, the re-appropriation of technologies, and the need for infrastructural support for continued and ongoing activism.
Finally, research employing friction as a design strategy embodies both an engagement with the product-residue of the everyday and with a philosophy that politics is fundamentally contestational. This transition shifts the unit of analysis from the activity to the smaller-scale gaps and spaces in between activities and the larger-scale implications of those activities.
We find little research that embodies this approach to designing for civic engagement. I have just two examples of frictional designs for you.

First, Clement et al. [15] create friction through the adversarial redesign of identity infrastructures that receive everyday use. They designed overlays for government-issued ID cards that allow citizens to temporarily black out information unnecessarily exposed by default in many situations (e.g., buying alcohol requires sharing your photo and date of birth but not your name or address). The overlays present small obstacles in a larger infrastructure that citizens are confronted with on an everyday basis, provoking them to question the means of government identification and reflect on privacy more generally.
We find another example of friction in research that has explored alternative and oppositional media [32, 34, 51]. Activists seek to facilitate the exchange of alternative voices bypassing government control to allow the dissemination of potentially dissenting information. They often build on top of other stable and pervasive infrastructures (e.g., the web [34] or mobile phone networks [32]), at times in parasitic relationships, to subvert these infrastructures and put them to new and alternative uses. Here, alternative media use escapes privileged moments by undercutting the power relationship that allows the state to define what constitutes privilege.

Given the dearth of examples of friction applied in designs for civic engagement and the promise suggested by these initial examples, I turn next to expand on ‘friction’ as a strategy for bringing everyday provocation to the infrastructuring of civic engagement.
As a starting point for exploring how to create friction within CE, we adapt Hassenzahl et al.’s four principles for designing within an ‘aesthetics of friction’ [29, 30, 44]. (Hassenzahl was the one with the Keymoment key holder and the Forget Me Not lamp from earlier in the talk):

1. First, designs for friction are not neutral. They take a position, an explicit stance **toward their users**. Designs for friction provoke individuals to identify not as users but as citizens in the most active sense possible.
2. Second, designs for friction want to cause trouble. They do not want to help you, not make CE more efficient or convenient for you, and not merely blend activities of CE seamlessly into everyday life. Rather, designs for friction place little obstacles in your way. Designing for friction means making citizens pause and reflect—reflect on alternative civic values, on the viewpoints of others, and on one’s agency as a citizen .. not user. … By carving out space for reflection in the residue between activities, designs for friction counter the stasis and complacency caused by typical infrastructures.
Four Principles of Creating Friction

1. Designs for friction take a position or a stance.
2. Designs for friction want to cause trouble.
3. Designs for friction are naïve and inferior.
4. Designs for friction are not absolute.

adapted from Hassenzahl et al. (2011, 2015)

3. Third, designs for friction are naïve and inferior to the user. Designs for friction do not take agency away from the citizenry. They do not make use of ‘intelligent’ algorithms to anticipate and represent individuals in civic participation. Rather than staking a claim to values identified a priori by designers, they provoke individuals to articulate and stake a claim to their own values.
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And fourth, designs for friction are not absolute. They do not impose change. Designs for friction provide opportunities for citizens, not mandates. There is always an alternative to acknowledging, responding to, or using infrastructures of CE. Frictional infrastructures do not stop citizens from carrying on as intended. Rather, they serve to make citizens pause, to be disruptive without bringing things to a halt.
## Design Strategies for Creating Friction

- infrastructuring through intervention  
  (Clement et al. 2012, Irani & Silberman 2013)

- infrastructuring by creating alternatives  
  (Hirsch 2009a, 2009b)

- infrastructuring by making gaps visible  
  (Chalmers & Galani 2004, Mainwaring, Chang, & Anderson 2004)

- infrastructuring by using trace data for critique  
  (Khovanskaya et al. 2013, Weise et al. 2012)

In addition to (and separate from) the four principles, we were also able to synthesize from examples in previous research an initial suite of four design strategies for creating friction. In this synthesis, we build on examples from within but particularly also outside the domain of CE. We talk more in depth about these four strategies in the paper.

- The first strategy is to subversively intervene in existing infrastructure one has no control over, such as in the case of the ID-card overlays from Clement et al.; or in the case of Turkopticon by Irani & Silberman who, in the domain of labor justice and AMT, “graft a new infrastructure onto an existing one” in order to reveal previously invisible relationships and empower a previously disenfranchised stakeholder population.
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- Second, to create alternative infrastructures in parallel to existing ones (sometimes piggy-backing on them) in order to facilitate a pluralism of voices (e.g., alternative media, parallel communication infrastructures).
Third, to make gaps and seams in infrastructure visible (a la Seamful Design), even foregrounding them, in order to engender awareness, reflection, and questioning of the values inscribed in infrastructure and the activities they enable or inhibit.
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- Or fourth, to visualize trace data of infrastructural use to reveal and critique infrastructure — as Khovanskaya et al. have done in the domain of web privacy and surveillance provoking critique and reflection on commercial data mining practices.

Together, the four principles and the four design strategies represent a good starting point—elements of a design brief if you will—for future work on designing for friction in the infrastructuring of civic engagement.
Conclusion / Contributions

- design space for the infrastructuring of civic engagement
- two dimensions
  - everydayness and paradigms of political participation
- four approaches to designing for civic engagement
  - deliberation, situated participation, disruption, friction
- unpacking opportunities to design for friction

Ok. In conclusion, designing for friction foregrounds the significant role of infrastructures when the everyday is emphasized. As existing infrastructures are slow to change and susceptible to inertia, various strategies have been employed to work through and around them, applying contestation, provocation, and critique to question the status quo and counter inertia. We position friction to foreground infrastructures through everyday obstacles that counter the potential of stasis and complacency.

In this research, we have introduced theories of the everyday to the emerging bodies of research on contestational design and infrastructures of civic engagement. Our research contributes a design space distilling and describing four distinct approaches to designing for civic engagement, including deliberation, situated participation, disruption, and friction. We argue that there is an untapped potential and unpack opportunities to design for friction. We call you to design for friction—leveraging critique and contestation as means of re-unifying politics and the everyday.
Creating Friction: Infrastructuring Civic Engagement in Everyday Life

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Thanks!