Ten simple rules towards an inclusive conference

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Abstract (optional from what I've seen)

The authors of this article participated in the organization team of the annual user conference of the R Project for Statistical Computing, held in July 2021. useR! conferences are non-profit events organized by volunteers from the R community and arranged by the R Foundation. The conference attracts a broad range of participants from academia, industry, government, and the non-profit sector. For 2021, we aimed to build a high-quality virtual and explicitly global conference in a kind, inclusive, accessible, and welcoming environment for everyone. In this article, we streamline our most important learnings in 10 simple rules to host an inclusive conference. These rules apply equally to academic, industry, or mixed conferences; the rules are inspired by a global experience but also apply at the regional or local level.

Introduction

Conferences, from the Latin *conferre* or 'to bring together', are spaces to meet and reconnect with members from a specific community, learn about advances in the field, and share our recent contributions. However, conferences are likely to reproduce the systematic discrimination occurring in other spaces in our fields. Lack of representation and unwelcoming–or overtly aggressive–environments exclude people from the opportunities for learning, producing knowledge, and becoming active community members that conferences can provide to the non-marginalized [1]. Exclusionary conference experiences can even divert career paths, affect lives, and drive people out of academia [1, 2]. This message is not new. Barriers such as unattainable registration costs, sexism, and ableism, among others, have already been exposed and discussed in the literature [2–5], and some proposals for more inclusive conferences have been put into practice [6–11], with a primary focus an the online format to open doors for inclusion.

This article puts the focus on practices for inclusive conferences, whether they are virtual or in-person, though we advocate for an online component. The rules written

here are directed to people who are part of a stable meetings committee that oversees the site/location selection process, or that coordinates with the local organizers of conferences. The rules can also be helpful to local/virtual organizers who desire to make an inclusive conference starting at the planning stage. These tips stem from the authors' experience of organizing useR! 2021, a virtual and global statistical computing conference for users and developers of the R programming language [12]. We embraced the challenge of organizing a high-quality virtual conference in the context of the COVID-19 pandemic and making it a kind, inclusive, and accessible experience for everyone. Here, we share the lessons learned within the past year of organizing useR! 2021, summarized as ten simple rules towards an inclusive conference. The rules are organized in three groups (Figure 1). Rules 1, 2 and 10 refer to pillars of an inclusive conference: embracing diversity in all its dimensions, creating a safe and welcoming environment for everyone, and making the conference part of a long-term process for inclusion. The next two rules are focused on the people that participate in the conference: Rule 3 refers to the importance of working with an inclusive and diverse organizing team, and Rule 4 concerns the necessity of removing implicit and systemic bias from spotlight roles like keynote speakers, other presenters, program committee members, or other session chairs. Rules 5 to 9 are rules about components of the conference that should be carefully planned for: an online component, accessibility to people with disabilities, language inclusiveness, a welcoming communication strategy, and financial resources to support inclusion. These rules apply equally to academic, industry, or mixed conferences; the rules are inspired by a global experience but also apply at the regional or local level.

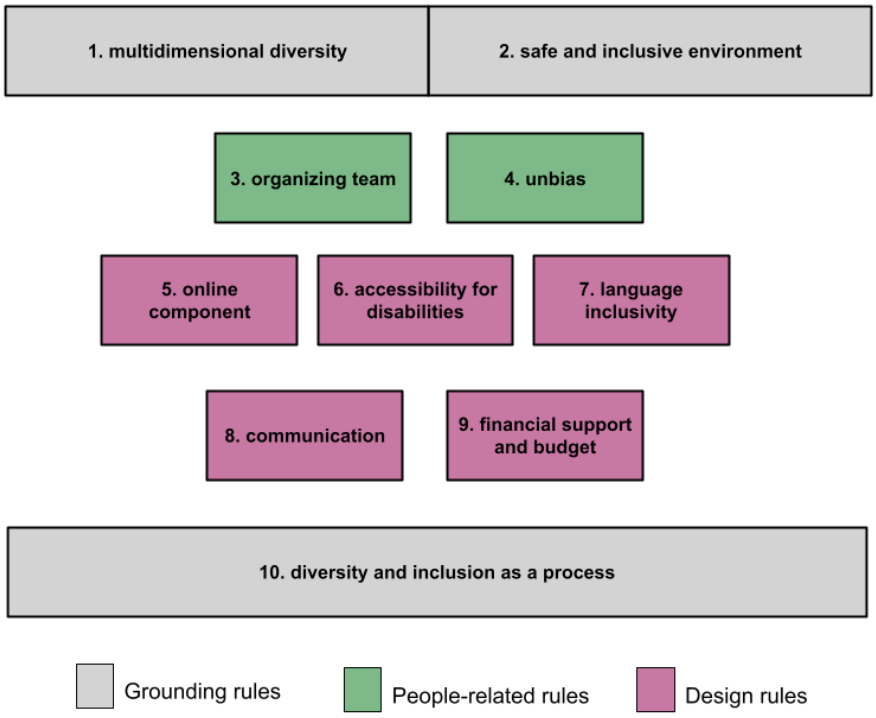

Fig 1. Diagram of the rules organized in three groups: grounding rules (rules 1, 2, and 10), people-related rules (rules 3 and 4), and design rules (rules 5 to 9).

1 Embrace all dimensions of diversity

Diversity encompasses multiple dimensions: age, physical ability, career stage, gender, gender identity, geographic origin, language, neurodiversity, race, religion, sexual orientation, and socioeconomic background, to name a few. Human diversity should be celebrated and respected in every way. Nonetheless, we live in a world with implicit hierarchies along these axes. Some statuses (e.g., cisgender, white, male, from the US or Europe) hold the privilege of being the default settings for which all systems–including conferences–are consciously and unconsciously built. While no isolated initiative can change reality by itself, building a more diverse and inclusive conference starts by recognizing that these inequalities have systematically excluded whole groups of people from academia and scientific and professional circles [13].

Recognizing our privileges–unearned advantages given by society to some people but not all–particularly in our field and in our scientific or professional community, will help identify which subgroups have been the most excluded or discriminated against. These are the groups we need to make more effort to include. Investing more effort in the most excluded groups does not mean neglecting the others, but it will guide the vision of diversity for your conference–and your strategies to achieve it: Will a more diverse conference translate into an even gender distribution in your speakers? Would it be the presence of racialized people –especially Black people– among the head organizers, speakers, and attendees? Would it be having LGBTQIA+ friendly-spaces or community participation from key geographic regions? Depending on the field, region, or community, it could be Black people, LGBTQIA+, Muslim, or other people. Intersectionality, or the complex, cumulative way in which the effects of multiple forms of discrimination combine or intersect, should be taken into account.

2 Create a safe and welcoming environment

While it is essential to improve representation towards some of the most visible dimensions of human diversity, such as race, gender, and country of origin, building a truly inclusive environment means taking care of all the other aspects of diversity as well. Having consideration of religious practices, setting specific accommodations for breastfeeding and child care, having LGBTQIA+-friendly spaces, creating community-only spaces, and acknowledging that gender is not binary are just some examples of decisions that can make inclusion real. Importantly, you can take active steps in creating a more welcoming environment without requiring anyone to disclose personal information.

Adopting a code of conduct and creating a team to enforce it are key aspects in creating a safe environment during a conference [14]. The code of conduct is a document meant to keep the community safe and should state clearly the unacceptable behaviors, the consequences for engaging in such behavior, and the way to report violations [15]. The code of conduct team should receive training on how to receive reports, respond to incidents, and communicate their responses, and organize accordingly. A diverse code of conduct team will be more understanding of power dynamics and sensitive to discrimination and harassment issues. There are also disciplinary cultures and geographical considerations that may need to be considered when developing and communicating the code of conduct. We strongly recommend reading 'How to Respond to Code of Conduct Reports' [15] as an excellent starting point for the Code of Conduct teamwork.

3 Have an inclusive and diverse organizing team

A genuinely inclusive conference can only be organized by an inclusive and diverse organizing team. Build a team with people from different regions, genders, races and ethnicity, socioeconomic statuses, and other aspects of diversity. Go beyond balancing all genders in this effort and pay special attention to other marginalized groups (see **Rule 1**). To ensure a deep understanding and smooth communication with different diverse groups, it is essential to create a representative working group that functions as a snapshot of the community at large. If you already have an organizing team, check for gaps in its composition.

Gathering a diverse team will only work if there is real inclusion. People with disabilities often say: 'Nothing about us without us'; the same holds for other dimensions of diversity. This means that the actual life experiences, expertise, and insights from people in marginalized groups cannot be replaced by good intentions from people outside these groups [16]. People who have experience with exclusion have the social and technical expertise about removing barriers to inclusion. A truly inclusive and welcoming space is one in which everyone in the team is invited to be part of the solution. However, do not expect people from minoritized groups to only work on these solutions, and respect their interests in other areas of the organization.

Creating and maintaining such a team and space may seem more challenging than working in homogeneous teams–when you are not used to them–but the positive outcomes are worthwhile. Having diverse people in decision-making positions will affect positively all the other aspects of your conference because all the processes will benefit from their input, expertise, and distinct perspectives [17]. In addition, a diverse team plays an important role at creating a welcoming space because representation–seeing people with similar life experiences occupy public spaces, positions of power, and breaking negative stereotypes–is one of the best ways to create a sense of belonging (see **Rule 2**).

The following advice should apply to any kind of team, but is specially relevant when working with people from marginalized groups. Don't expect self-nomination and voting to work as mechanisms to counteract systemic inequalities. Nominate directly, offer leading positions, and let people from privileged groups step down. Build an environment in which every person can express their position and give priority to people from systematically excluded groups. Offer support and encouragement if you encounter cases of impostor syndrome. You can, for example, break the expectations about leadership as a lonely task and create smaller, co-led groups, where everyone finds their preferred tasks and gets to take leadership.

Most importantly, take care of your team. Having a diverse team and executing inclusive and accessible practices throughout the organizing period–it might be a year or two–may require a lot of effort. The effort is worth it because it strengthens the event and the community making it truly welcoming for everyone. However, having a strong community as the only reward may be enough for those who are in more privileged positions. Some people and often the minoritized ones do not have institutional support to put time and effort into the organization tasks and do not have the luxury to commit to the organization for free; consider paying them as an item in your budget. In addition, tasks such as receiving and responding to code of conduct reports, can be emotionally intense work and should be additionally rewarded. Prioritize your team's well-being. Check on them regularly and make sure everyone is comfortable. Be mindful of each particular context, be flexible with hours or commitments, and revise your budget (see **Rule 9**).

4 Consciously unbias your spotlight roles

When choosing or inviting people as keynote speakers, program committee, session chairs, and other spotlight roles, it is likely that there will not be much diversity in the first set of names. Many of our biased lists are products of the existing systems that have always privileged some groups of people [18–21]. Rather than deter us, this implicit and systemic bias should encourage us to look further to find great people that are not routinely in the spotlight. Ensuring diversity in each of these roles needs to be a deliberate process. We need to go beyond our narrow and often limited networks to look for, reach out to, invite, encourage, and onboard these people until there is ample representation across the diversity spectrum and dimensions. Make sure that every selection committee–the committee looking for keynote speakers, the selection committee for abstracts, the prizes and award committees–are also diverse [19, 20], and ask them to be aware that everyone has implicit biases, to recognize them, and try to counteract them. An inclusive and diverse organizing team (**Rule 3**) is already a great starting point to overcome this bias in other roles. The regional and local communities in your field are also good sources to tap into.

In academia and the industry, not only does the list of people considered in spotlight roles is usually biased, but the spotlight roles themselves are. Scientific publication and development of software, are often regarded with higher value than community building or teaching, which may be equally if not more challenging, less rewarded, and usually tackled by women, people of color, people with disabilities and from other minoritized groups [22, 23]. Defy the stereotypical criteria for success by acknowledging these community practices and the people behind them. You can, for instance, give more space in your conference to talks about community building as an area of knowledge production, and reframe the awards ceremony to acknowledge those who prepared accessible slides and presentations (see Rule 6), for being mindful of inclusiveness. Finally, do not restrict people from marginalized groups or community-builders to talk or work only on issues related to diversity and inclusion; recognize their areas of expertise and interest.

5 Have a strong online component of the conference

In-person interaction in conferences is priceless, but only for the ones who can afford to attend. Barriers such as cost of registration, transport and accommodation, the logistics of long-distance travel, and discriminatory visa applications, are particularly true for conferences that usually take place in high-income countries [3, 24, 25]. Online conferences are more inclusive: they do not require a visa or a big budget, and are more accessible to people who may be unable to travel because of health issues or family responsibilities [26]. This means that online conferences have a greater reach, not only in terms of participants but in terms of the tutors and presenters that can participate [8, 25, 27]. The online format may also make it easier to be inclusive of geographic regions by encompassing several timezones in the week or easily deciding to rotate the favored timezone year to year without depending on a conference central location.

Within the context of the COVID-19 pandemic, many conferences embraced the online format; but at the time of writing, some are reverting to in-person, which risks going back to the barriers mentioned above. Alternatively, a conference could have a hybrid format with an in-person and an online component. This dual format could allow a group of people to interact face-to-face while providing many others the opportunity to participate remotely. The challenge and requirement for this kind of setting would be to make the online component as relevant as the in-person component

and not just a consolation prize to the less privileged in the community [10].

Networking and socializing have been mentioned as challenging aspects of online conferences, mostly because we are used to interactions at in-person social settings such as coffee or lunch breaks [26, 27]. However, in-person settings might not be comfortable or appealing to everyone for socializing; some of these spaces may be exclusionary (e.g. galas or dinner nights at expensive venues), and common place for code of conduct violations to occur [15]. On the other hand, there is evidence that virtual communication before face-to-face interaction can make people from minoritized groups feel more included, thus participate more (e.g. [28, 29]). Organizers of online conferences should invest time in creating opportunities to meet and bond virtually, respecting people's limits, preferences, and remembering that 'the usual' does not necessarily work for everyone, and that one single networking activity will never serve the whole community. It is worth trying new and varied activities that might work with subgroups of attendees. Some ideas in this line are: offering the option of written chat only, instead of voice or video conversations, opening events with teamwork like trivia, offer some events that can be enjoyed passively like movies, yoga sessions, or art displays, where attendants can choose to just sit and enjoy without talking, or have a chat channel to comment on their experiences during the session.

6 Make the conference accessible to people with disabilities

Conferences are among the least accessible spaces that people with disabilities may encounter [30]. Even when conferences implement other inclusive practices, the participation of people with disabilities is often overlooked [31]. This is one key aspect where having someone in the organizing team allows them to take part in the decisions from the beginning (see **Rule 3**), as thinking about disability or simulating it are not substitutes for real-life experience [16]. Planning for accessibility requires time and early decision-making [5] and should not be dealt with at the last minute. Key decisions in this respect are hard to correct, e.g., when finding out too late that a venue is inaccessible for people who use wheelchairs.

For in-person conferences, the venue should comply with common accessibility standards, such as being adequate for people who use wheelchairs, have signs in Braille, and a sound system compatible with hearing devices and live interpretation, just to name a few important features. In addition to this, the organizers should take care proactively of invisible disabilities, for example, by providing quiet spaces for privacy and noise-free conversations, provide chairs in open spaces, and menus that include sugar-free, gluten-free options.

Regardless of the conference format, all platforms (website, chat, conference administration tools) and images used for the communication strategy of the conference should be screen-reader friendly and keyboard accessible, and have alternative text. Any videos should have captions and a transcript. The organizing team should provide accessibility guidelines for slides and presentations, encourage their use, and be available for any questions presenters and attendees may have. Slide decks should be made available beforehand, either in webpages or available for download to ensure that everybody can follow their content during the presentations.

Accessibility practices must include social events and networking, and include activities that do not restrict participation based on body type or ability. Importantly, all these accessibility practices are inclusive not only for people with disabilities but to a broader spectrum of people. For instance, captions are helpful for non-native speakers, having the material available for download helps attendeed with low bandwidth

connection, etc. Accessibility efforts should be explicitly displayed in the official communications of the conference (see **Rule 8**).

7 Don't let language restrict high-quality participation

In international conferences, the linguistic diversity of conference participants is often overlooked. English is usually the official and sole language for submissions, presentations, tutorials, workshops, conference platforms, webpage, and official communications. While English is the primary language in scientific communication and one official language makes it conducive to communicate widely, this makes being a native English speaker, a privilege. Non-native English speakers could miss opportunities to attend or actively participated in conferences (e.g. ask questions or participated in discussions), and conferences may miss potentially innovative contributions.

Providing a welcoming and diverse environment by encouraging the full participation of non-native English speakers is critical (Rule 2). Advertising the conference in several languages and considering having non-English workshops and presentations to help overcome this barrier. Allow the audience to ask questions in their native language and invite others to help translate it; conversely, if the presenter is not comfortable with questions in English, encourage people in the audience to help by rephrasing their questions or try to translate them; after all, the community should be supportive.

8 Express the welcoming spirit in your communication strategy

Your communication strategy should reflect the spirit of the conference and be inclusive by design. As you design the promotion plan, actively reach out and promote the conference to people who have been systematically excluded. If part of the community has been historically discriminated against, emphasize that they are particularly welcome in this event and that the organization will make it a safe and inclusive environment. This could be done through publishing the diversity statement (e.g., https://user2021.r-project.org/about/diversitystatement/), the code of conduct, and accessibility guidelines and advertising financial support, or other creative ways that show that everyone is seen, respected, and welcome (Fig. MARMOTS). Also, try to advertise the conference in multiple languages (**Rule 7**) and multiple platforms (e.g. Twitter, Facebook, LinkedIn, conference website, email lists)– part of your community may use a different platform than the one who regularly attend the conference. With proactive inclusive communication strategies, potential attendees will be assured that this is their space and community too (e.g. having accessibility guidelines on your website sends a welcoming message to people with disabilities), without the emotional labor of contacting the organizers and be public about your commitment to equity and inclusion.

Inclusive language–language free from words, phrases or tones that reflect prejudiced or discriminatory views of particular people or groups–should be used in all communications [32]. Make the effort to teach yourself the vocabulary and the best ways to communicate to account for every culture and situation. Do not expect minoritized people to teach you–it's not their role–and accept feedback without being offended.

9 Allocate financial resources to support your conference goals

Conference budgets are limited and rely mostly on sponsorship and attendance fees. While some expenses might be more or less fixed, allocation of resources has to be intentional to support the goals of the conference towards inclusion. It is important to estimate the costs for these inclusive practices and define your priorities in advance, like paying the organizing team, necessary training (e.g. code of conduct), and accessibility practices (e.g. captions). Aditional support for attendees should also be considered in the budget: child care support, transportation fees, visa-related support (if in-person), internet connection services (for the virtual component). Consider that an online conference might reduce organization costs (e.g. no rental costs for a physical venue), allowing to redirect the money towards other inclusive priorities. Instead of depending on registration fees, ask sponsors to support specific items in your inclusion expenses.

Registration costs are one of the largest barriers for conference attendance, and, if we are aiming for inclusiveness and representation, the socioeconomic context of participants, their country of origin, and their career status should be taken into account when determining the registration rates [33–35]. (see https://spcanelon.github.io/useR2021-cost-conversion-tool/ for an example of conversion rates based on country of origin and career status). In general, people should have the option to locate themselves in a category they consider affordable, even with the possibility of a 'pay what you can' approach. Resources permitting, you can aim to have a conference with no registration costs, but bear in mind that free events have a lower attendance rate than events with registration costs [36]. Offering fee waivers to attendees is also a good option, but even then, other costs can be prohibitive. Scholarships or grants to attend the conference is a common way to boost participation from people from marginalized groups, and conferences usually ask for cover letters or applications from them. These programs are important for in-person participation, which is more expensive than online participation, to support travel and lodging expenses. For online conferences, granting fee waivers or support for hidden costs like internet connection is easier and cheaper. Lower costs for attendance and offering financial support instead of prestigious grants–that could look good in a CV–may reduce the number of people applying for them and allow you to help all applicants. Applying for loans, grants, and scholarships might be an emotionally demanding task, so if this scenario is likely, simplify the process of asking for financial support.

10 Diversity and inclusion are processes

Do not expect the conference to be perfect. Resources, both in time and money, are always limited. Most importantly, there are systemic discrimination issues at higher levels (e.g. society, academia) that one conference cannot change. There will be resistance, but your courage to make changes will be a step towards a more diverse and inclusive community, and can have a huge impact in the lives and careers of often excluded and minoritized people.

Diversity and inclusion will be the norm in the long-term if we see conferences as part of the structural change. After the conference is over, assess whether equity and inclusion goals were met during the meeting. This can be done internally within the organizing team and taking into account the attendees' point of view. Identify the things that worked towards your inclusion goals, and try to understand what went wrong and how people were excluded. Make sure to share the information with future organizers so that they can use it as a starting point and keep working to improve inclusion in the next edition of the conference.

Concluding remarks

This article suggests rules to pivot traditional conferences towards diversity and inclusion, and strive to build more inclusive and welcoming communities. The ten rules stated here can be adapted depending on the conference format and settings. We organized useR! during a global pandemic, and as a team, this was a challenging journey. We engaged in most of the practices mentioned here and learned others along the way. Organizing a conference and implementing inclusive practices are both learning experiences; do not expect to achieve everything, set priorities and remember rule 10: diversity and inclusion are processes. If you are part of a stable meetings committee, you could encourage organizers to follow these rules. If more conferences and domains apply them, the process will get more streamlined, straightforward, and mainstream to adapt with minimal overhead. And you will make a change towards healthier, stronger, and more inclusive communities.

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