



## Inclusive disunion - and what it could mean for RRI policies

By Harald König\*

*Notions of 'Responsible Research and Innovation' (RRI) or 'Responsible Innovation' have evolved over at least ten years, both in the EU and the US. An important driver appears to be that governments have felt the need to better manage societally and ethically (potentially) problematic areas of research and development (R&D) such as synthetic biology (synbio) – aiming to shape R&D processes early on in order to align them better with societal expectations (1).*



Whereas policy schemes for science and technology development have often strived primarily for an efficient translation of research into economic growth, RRI (additionally) aims to modulate or shape R&D according to broader ethical values and societal needs. These include ethical acceptability of innovations, improved quality of life as well as an economically, socially and environmentally sustainable development. Key RRI elements has been described as social-ethical reflexivity about purposes or possible impacts; anticipation by envisioning, describing and analyzing potential impacts; inclusive deliberation and mutual learning; and responsiveness, using the prior elements to set the direction and influence paths of research and innovation (2, 3). Inclusive participation processes should lead to 'co-responsibility' for and the 'co-construction' of innovation processes. As a major element to shape research and innovation according to societal needs, deliberation in these inclusive processes should generate 'constructive input' for governance schemes and policymakers to set priorities on research agendas, technology design criteria or societal desirable products (3, 4).

### State(s) of disunion

Though this may sound plausible enough, experiences from activities of SYNENERGENE's 'Research & Policy Platform' suggest that it is far from clear what all this could mean for the different players in practice, and how RRI notions or principles may be linked to effective policies. Apart from being perceived as a vague concept by many players, one issue in particular has appeared that may matter for RRI and how it could contribute to policies for generating societal beneficial research and innovation. This issue relates to *de facto* 'incommensurabilities' in stakeholder views. These have arisen regarding key notions of RRI, such as societal benefits that should go beyond (macro-) economic gains: while some groups 'perceive' or 'see' broader societal benefits and ethical values linked to synbio as something that can be effectively separated from the economic situation of people or 'markets', others appear not to 'believe' in or cannot 'see' the possibility of such



an separation. Similar 'incommensurabilities' linked to a seemingly sharp divide in world views of different players also exist about the ways to realize – even common – goals or values such as sustainability or climate change mitigation. For example, while industry representatives and some policy experts mainly see solutions in a synbio-driven bioeconomy for economic growth by more efficient biomass use, representatives of civil society organizations instead suggest the need to limit the ambitions of industrial societies (that were bearing negative impacts on the global South) and striving for less consumption, less transport and less globalization.

Obviously, one could argue that a result of mutual learning processes is that different players become aware of such states of 'inclusive disunion'. Yet at the same time these differences raise questions as to whether mutual learning and inclusive deliberation can go beyond that point. And on what this could or should mean for strategies aiming at 'constructive input' for technology development, research and innovation policies, or for public policy. The latter question appears to be crucial to RRI's central aim: to align research and innovation processes according to societal needs and values, based on inclusive participation processes.

## Beyond division: the quest for appropriate policies

Worldview-based, stark divides on technologies and their role to solve societal challenges call into question policies that would focus to a large extent on 'constructive input' for policymakers from mutual learning and inclusive deliberation in order to set priorities on specific research directions, technologies or products derived from them. If there is not even a slight agreement on the 'best' technology to solve a societal challenge, or on whether a technological solution rather than some kind of 'social innovation' may solve an issue, prioritizing specific solutions (be they technological or non-technological ones) will be a hard thing to do. Such strategies may thus be of little help when it comes to policies that could better align research and innovation to 'societal needs' and values.

More plausible policy approaches might be ones that focus more on using common ground in overarching goals and values identified by mutual learning and inclusive deliberation processes, in order to provide constructive input for developing (ethico-political) frameworks and standards. These could then 'set the rules' for a kind of directed 'evolutionary' process to solutions and their implementation. Such a process to innovation should benefit from, and foster an R&D landscape that is as diverse as possible. It would thus be at variance with ideas that focus too strongly on more 'interventionist' strategies to prioritize or 'pick' certain research directions or specific solutions (5, 6). Focusing such a more 'indirect' and evolutionary policy concept on ethical values and morality alone may have, however, only a limited potential for mitigating negative 'market externalities' (see, e.g., (7)). Given that the majority of global GDP and R&D investments, but also externalities, are linked to the private sector, such frameworks would need to allow corporations to compete on the basis of innovations and economically viable solutions that advance resource conservation and respect social standards. These frameworks could, for instance, include rules and (accounting) schemes for the disclosure of externalities, empowering both consumers and investors



(public and private ones) to make responsible and directive choices, or for limiting the power of vested interests (8-10).

The development of such frameworks and schemes may not necessarily depend on or be linked to governments alone. Additionally, or alternatively, multistakeholder-schemes of 'governance without government' (11) to jointly develop and implement standards in markets (e.g., with respect to a bioeconomy) might be required. These may, for instance, help to overcome political gridlock or to balance issues that may arise from vested interests within political systems. The latter may, for example, stem from stakes in companies through government-supported venture capital (12, 13) or from state-owned industries and state actors regulating their 'own' ventures (14, 15). More 'polycentric' policies involving diverse governance schemes may also help to better cope with issues of divisions and mistrust of players linked to it, as well as with the strong international and global dimension of technologies such as synbio (and the need to find global agreements). 'Polycentric' patterns could promote key elements linked to polycentric governance in other contexts, like diverse experimental efforts, enhanced collaboration, or mutual monitoring and trust, and may facilitate (formal and informal) bilateral and multilateral exchange between nations (16).

A prerequisite for finding the right (mix of) schemes that could turn 'meaningful' democratic deliberation processes to effective policies will depend on explorative political cultures, though. Experimentation with pathways to more robust democracies with polycentric governance structures that can effectively limit the power of special interests – both from within and from outside politics – could be a primary area for such exploration. Here also schemes for balancing technocratic and direct democracy approaches may be worth looking at (e.g., (17)). Yet, in order to be broadly supported and viable in the long term, any policy approach would ultimately need to be capable of producing social and economic benefits for a wide range of people in communities and societies – in both the northern and southern regions of the globe. If RRI cannot be turned into policies able to deliver such outcome, it may in fact remain a concept – and as vague as often perceived today.

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