

1 The governance of Responsible Research and Innovation (RRI) at the level of a large Research and Technology Organisation (RTO): Experiences from stakeholder dialogues on RRI-related goals

1.1 Introduction

It can be assumed that organisational sense-making processes, structures and routines related to Responsible Research and Innovation (RRI) evolved long before the concept emerged. The JERRI project¹ bridges between such existing practices and structures and the ambition to further align the orientation and effects of research and innovation to societal needs and values (cf. Lindner/Kuhlmann 2016). At the current stage of the project, long-term organisational orientations as well as goals for pilot activities in thematic areas corresponding to the five RRI key dimensions currently promoted by the European Commission – Ethics, Gender, Open Access, Societal Engagement and Science Education are developed. This process unfolds in a series of stakeholder workshops within the Fraunhofer-Gesellschaft (in the following termed ‘Fraunhofer’) and TNO.

Obviously, the (research) organisation is the primary place where decisions on the institutionalisation of RRI-related practices are made. Aligning research and innovation to societal needs and values (cf. Lindner, Kuhlmann 2016), however, implies that “external” normative orientations, interests and legitimacy pressures are already addressed in the institutionalisation process itself. An integration of both perspectives seems to be analytically and practically underrepresented, which may also be due to the fact that stakeholder theory either mostly takes on an organisation-centred, “managerial” viewpoint or considers wider “stakeholder systems” without single organisations as their reference point (cf. Haegeman et al. 2012, pp. 6 ff.). “Lessons learned” how to combine both views in goal setting processes are however highly relevant for each endeavour to systematically promote RRI in terms of the alignment between societal expectations and research and innovation practices. Moreover, it can be assumed that, apart from the internal/external dichotomy of stakeholder involvement, there may be additional relevant characteristics of stakeholder involvement affecting RRI-related decisions and goals.

1.2 Aim of this paper

This paper aims to reflect the procedural experiences from the five stakeholder workshops of the Fraunhofer-Gesellschaft² at the level of the methods used to engage in five stakeholder dialogues on organisational, RRI-related goal setting. At the analytical level, it takes the perspective of stakeholder approaches and links the observations to concepts from the neo-institutionalist perspective. The experiences from the five stakeholder workshops allow for a comparative reflection. This reflection is empirically based on the workshop protocols that capture both the process and the results of the stakeholder discourses. The comparative reflection is guided by the following questions:

- How do different contingencies affect the outcome of vision and goal development?

1 The project Joining Efforts for Responsible Research and Innovation (JERRI) draws on the concept of Responsible Research and Innovation (RRI) to orchestrate a deeper transition process within the two largest European Research and Technology Organizations (RTOs), the German Fraunhofer-Gesellschaft and the Netherlands Organization for Applied Scientific Research (TNO), towards responsible research and innovation (R&I) practices. The project is funded under the European Commission’s Horizon 2020 / Science with and for Society programme as a response to the call “Supporting structural change in research organizations to promote Responsible Research and Innovation (ISSI-5-2015)” (JERRI 2017). It runs from June 2016 until May 2019.

2 An inter-organisational comparison between the goal development processes of TNO and Fraunhofer could not be made yet but will be a route for further inquiry.

- How do different contingencies affect the stakeholder dialogues themselves?
- What can be learned for future RRI-related vision and goal development settings at the level of the processes and methods used?

The outcomes of this paper are twofold: First, the results will comprise methodological insights for RRI-related vision and goal development settings in a large RTO. The analysis of how different contingencies can affect both the process and the outcome of the respective stakeholder dialogues will be turned into a set of “lessons learned” from a practitioner’s view. Second, implications at the level of STI governance will be outlined.

1.3 Method

The comparative reflection of workshop results in view of different contingencies is primarily based on what could be observed in the protocols of the five visioning and goal development workshops at Fraunhofer that took place as part of the JERRI project in spring 2017. Each workshop focused on one of the five RRI key dimensions: ‘Ethics’, ‘Gender’, ‘Open Access’, ‘Societal Engagement’ and ‘Science Education’. In addition, individual observations of the moderators in the forefront and at the workshops form the empirical basis of the comparisons made.

Although the concrete realisations of the five visioning and goal setting processes at Fraunhofer varied, they followed a common methodological approach for the preparation and the moderation of the workshops. The methodological approach underlying the five workshops consists of the following major components:

1. *The identification and selection of stakeholders:* A process of stakeholder identification based on the “critical systems thinking” approach of Ulrich (2000) is applied. A distinction is made between different stakeholder types to account for the participatory logic of stakeholder involvement as one of the key principles of RRI. Different selection criteria being applied to the involvement of stakeholders are described.
2. *Visioning:* A visioning method (cf., for example, Wiek/Iwaniec 2014; Neuvonen/Ache 2016) is applied in the workshop settings to account for the long-term nature of RRI-related institutionalisation processes and to build on individual and shared values. The visions represent an explicit form of the preferred future in each thematic area. The application of the visioning method in the workshop settings comprised several steps, including the development of individual and group visions and a synthesis of these visions towards a final vision shared by all workshop participants.
3. *Goal development approach:* A method suited for the specific JERRI case is applied by building on the existing framework of governance principles provided by the Res-AGorA Co-construction Method (Bryndum et al. 2016) allowing for a systematic discursive identification of RRI-related goals and actions in group work.

1.4 Results

The comparative reflection on the five RRI-related goal development processes unveiled the following contingencies to have affected the five participatory vision and goal development processes: (1) the participation of stakeholders external to the organisation, (2) the distribution of expertise among workshop participants and (3) how well the organisation already developed a thematic area in terms of sense-making processes, structures and routines. It could be observed that the diversity of statements as well as the related convergence/divergence of the visions developed in the five workshop settings were in part a result of these contingencies. At a conceptual level, these observations could be turned into a tentative typology of stakeholder involvement in RRI-related participatory visioning and goal development exercises and beyond. From a practitioner’s view, future inquiry could turn such a typology into a framework for stakeholder involvement in similar settings.

The workshop discussions demonstrated that the values and goals articulated by the stakeholders external to the organisation did not diverge to a greater extent from the other stakeholders than the ones of the 'internal' stakeholders. This could speak against an over-estimation of organisational boundaries in stakeholder processes inherent to 'managerial' stakeholder approaches (e. g. Freeman 1984, Mitchell 1997)³. In some respects, this observation is in line with neo-institutionalist theories of the organisation, claiming that the institutional context leads to homogeneity among organisations in a field (cf. for example DiMaggio and Powell 1983, Kirchner et al. 2015). The decisive reference point for converging/diverging perceptions is thus not the single organisation but field-specific legitimacy pressures that many organisations in a field are subject to.

In contrast, expertise in the workshop topic seemed to be a decisive factor for the participation of stakeholders: Despite an orientation in the "critical systems thinking" approach (Ulrich 2000; Achterkamp, Vos 2007) where legitimate interests (and hence not expertise) was the criterion for the invitation of stakeholders, a remarkable 'bias' towards the actual participation of stakeholders with high field-expertise could be observed. Whereas field expertise can always be related to stronger interests and motivation to participate in related decision-making processes, the question how the presence of expertise affects the outcome of stakeholder processes seems to be nevertheless important. Among the five workshops, different shares of experts⁴ in the entirety of workshop participants could be observed. A comparison between the visions developed by different groups and the common vision developed by all workshop participants led to the observation that lower shares of experts eased the process of finding a common vision, whereas higher shares of experts related to less shared views and goals. Neo-institutionalist approaches highlight the professions as an institutional order (cf. DiMaggio and Powell 1983, Friedland and Alford 1991, Thornton and Ocasio 2008, Randles 2017, p. 22). Moreover, different degrees of professionalism are assumed to facilitate common views and goals within the organisation (Zucker 1977, p. 737). The observations show that shedding further light on the effects of expertise/laity could help to better understand such dynamics in stakeholder dialogues.

Partly related to the latter observation, the development of a common vision tended to be characterised by a higher convergence of goals and underlying values in fields where stakeholders had a basic previous understanding but that are not present in everyday processes, structures and routines. In RRI-related fields that were both framed / developed in the organisation in a relatively weak or a relatively strong way, participants revealed less converging views. On the one hand, these observations correspond to the assumption that logics unfamiliar to the organisation cannot be easily reconciled with existing institutional logics (on multiple/contradicting logics within the organisation also cf. Randles 2017, pp. 8, 42 ff.). On the other hand, consciously 'breaking up' stronger institutional logics in a visioning exercise may equally lead to diverging views. This observation could be particularly relevant for *RRI-related* visioning and goal setting processes as (re-)framings of organisational, responsibility-related discourses (cf. Teufel et al. 2016, p. 64).

1.5 Discussion

1.5.1 Practical implications

A further analysis along the directions shown could help practitioners in stakeholder-based visioning and goal development processes to reflect on the design of stakeholder involvement. The findings are particularly relevant for RRI-related stakeholder processes. Differences in the values and goals of external as opposed to internal stakeholders seem to be less pronounced and hence the focus on the internal/external dichotomy seems to be somewhat exaggerated. As external stakeholders cannot only be easily involved but also enrich RRI-related visioning and goal development processes, this can be a practical argument in favour of more 'inclusive' stakeholder approaches. In contrast, other dimensions such as the field expertise of the stakeholders involved seem to affect the process results. This would

3 Although they are mostly normative and not descriptive, they may frame the way we think of stakeholder processes.

4 The criterion for attributing 'field expertise' to stakeholders was a strong relation of their job description to the field.

mean that the 'self-selection of experts' into visioning and goal setting processes should not be left to chance but rather be subject to a more deliberate stakeholder selection.

Beyond such workshop-based stakeholder dialogues on RRI-related goals, the assumptions made would have further implications for orienting STI towards societal needs: Rather than opposing 'organisational' approaches of RRI-related transformation on the one hand to sectoral or overarching governance approaches on the other, further tailorings and levels of governance towards more responsible research and innovation might deserve attention⁵: More stakeholder dialogues and governance mechanisms could be differentiated according to groups of similar (research) organisations, to different research(-related) professions (also cf. Randles 2017, p. 22), scientific communities or to cross-cutting discourses.

1.5.2 Methodological limitations

Results of this study should be interpreted in view of the relatively low number of cases observed. The empirical data – workshop protocols and individual observations – were not primarily collected with the objective of an in-depth comparative study. Moreover, results partly resort to individual observations of the moderators during the five workshops. Therefore, the comparative reflections cannot exceed the status of inductively gathered ideas and hence can only be the starting point for further inquiry.

1.6 Conclusion

This paper aimed at reflecting the procedural experiences from the five stakeholder workshops of the Fraunhofer-Gesellschaft at the level of the methods used to engage in five stakeholder dialogues on organisational, RRI-related goal setting. Based on the observations made, assumptions were raised as to how the participation of stakeholders external to the organisation, the distribution of expertise among workshop participants and the development of RRI-related topics in the organisation may affect this convergence/divergence. These observations are widely consistent with neo-institutionalist approaches. Further analyses in this direction could result in a framework for stakeholder involvement in similar settings. Based on the results it can be argued that further, orienting governance approaches to cross-cutting 'fields' for transforming STI towards more responsible research and innovation may be effective.

⁵ For similar thoughts on the adequate levels of Foresight exercises cf. Schoen et al. 2011.

References

- Bryndum, N.; Lang, A; Mandl, Ch.; Nielsen, M.V.; Bedsted, B. (2016)**
The Res-AGorA Co-construction Method. In: Lindner, R.; Kuhlmann, S.; Randles, S.; Bedsted, B.; Gorgoni, G; Griessler, E. Loconto & A. Mejlgaard, N. (Eds.): Navigating Towards Shared Responsibility in Research and Innovation Approach, Process and Results of the Res-AGorA Project. Karlsruhe, pp. 55- 61. Available online at <https://indd.adobe.com/view/eaeb695e-a212-4a34-aeba-b3d8a7a58acc> [10.5.2017].
- DiMaggio, P. J.; Powell, W. (1983)**
The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, Vol. 48, pp. 147–160.
- DiMaggio, P. J.; Powell, W. (1983)**
The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, Vol. 48, pp. 147–160.
- Freeman, R. E. (1984)**
Strategic Management. A Stakeholder Approach. Boston: Pitman/Ballinger.
- Friedland, R.; Alford, R.R (1991)**
Bringing society back in: Symbols, practices and institutional contradictions. In: Powell, W.W.; DiMaggion, P.J. (Eds): *The New Institutionalism in Organizational Analysis*. Chicago: University of Chicago Press.
- Haegeman, K.; Pérez, S.E.; Marinelli, E.; Warnke, Ph.; Teufel, B.; Degelsegger, A. & Weiss, G. (2012)**
Communication Strategy – Deliverable D6.2. Report of the Forward Visions on the European Research Area (VERA) project. Sevilla/Karlsruhe/Wien: The VERA consortium.
- JERRI (2017)**
JERRI - Joining Efforts for Responsible Research and Innovation. The JERRI project consortium. Available online at www.jerri-project.eu [11.5.2017].
- Kirchner, S.; Krüger, A.K.; Meier, F.; Mayer, U. (2015):**
Wie geht es weiter mit dem soziologischen Neo-Institutionalismus? Eine kritische Auseinandersetzung. In Apelt, M.; Wilkesmann, U. (Eds.): *Zur Zukunft der Organisationssoziologie*. Wiesbaden: Springer, pp. 189–202.
- Kuhlmann, S.; Edler, J; Ordóñez-Metamoros, G; Randles, S.; Walhout, B.; Gough, C.; Lindner, R. (2016)**
Responsibility Navigator. In: Lindner, R.; Kuhlmann, S.; Randles, S.; Bedsted, B.; Gorgoni, G; Griessler, E. Loconto & A. Mejlgaard, N. (Eds.): *Navigating Towards Shared Responsibility in Research and Innovation Approach, Process and Results of the Res-AGorA Project*. Karlsruhe, pp. 135–158.
- Lindner, R.; Kuhlmann, S. (2016)**
Responsible Research and Innovation und die Governance von Forschung & Innovation: Herausforderungen und Prinzipien. In *Forschung: Politik - Strategie – Management*, Vol. 9, No. 1, pp. 22–27.
- Mitchell R. K.; Agle B. R.; Wood D. J. (1997)**
Toward a theory of stakeholder identification and salience. Defining the principle of who and what really counts, *Academy of Management Review*, Vol. 22, No. 4, pp. 853–886.
- Neuvonen, A.; Ache, P. (2017)**
Metropolitan vision making – using backcasting as a strategic learning process to shape metropolitan futures. *Futures*, Vol. 86, pp. 73–83.
- Randles, S. (2017)**
JERRI Deliverable D1.2. Deepening ‘Deep Institutionalisation’: Elaborating a Concept and Developing a Typology to Analyse and Contrast the Institutionalisation of De-facto responsible research and innovation (rri); and H2020 RRI in Research and Technology Organisations (RTOs). Unpublished Report. The JERRI project consortium.
- Schoen, A.; Könnölä, T.; Warnke, P.; Barré, R.; Kuhlmann, S. (2011):**
Tailoring Foresight to field specificities. *Futures*, Vol. 43, No 3, pp. 232–242.
- Teufel, B.; Lindner, R.; Gransche, B.; Goos, K.; Steen, M.; Nauta, J.; Emmert, S.; Joignant, A. (2016):**
JERRI Deliverable D1.1. Synthesis on existing RRI practices. Unpublished Report. The JERRI project consortium.
- Thornton, P.; Ocasio, W. (2008)**
Institutional Logics. In: Greenwood, R.; Oliver, C.; Sahlin, K.; Suddaby, R. (Eds.): *The Sage Handbook of Organizational Institutionalism*, Singapore: Sage Publications, Chapter 1.

Ulrich, W. (2000)

Reflective Practice in the Civil Society: The contribution of critically systemic thinking. *Reflective Practice*, Vol. 1, No. 2, pp. 247–268.

Wiek, A. & Iwaniec, D (2014)

Quality criteria for visions and visioning in sustainability science. *Sustainability Science*, Vol. 9, No. 4, pp. 497–512.

Zucker, L.G. (1977)

The role of institutionalization in cultural persistence. *American Sociological Review*, Vol. 42, No. 5, pp. 726–743.

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