



COMMENT

DOI: 10.1057/s41599-017-0005-4

OPEN

# Mediated populism, culture and media form

Michael Higgins<sup>1</sup>

**ABSTRACT** This comment seeks to identify some key concerns in the study of mediated populism. The paper highlights the relationship between populism and political conditions, noting that the weak party structures and non-conventional party-media relations that characterise populist actors applies across the political left and right, who engage strategically according to media conditions. In setting out the terms in which mediated populism operates, the paper stresses the turn to emotionality in media, with a particular prominence on the expression of aggressiveness. It links with the rise of participatory media, with an attendant shift in the style and form of language to characterise political discussion and influences on legitimate political speech. The paper then looks at the use of “fake news” as a means of positioning media within the discredited elite, warranting the easy dismissal of hostile content. While showing how the political and media environment provides fertile grounds for populism, and the extent to which populism is encouraged by media affordances, the article concludes by recommending the purposeful cultivation by media of alternative and proactive forms of inclusion and emotional engagement.

---

<sup>1</sup>University of Strathclyde, Richmond Street, Glasgow, G1 1XQ, UK. Correspondence and requests for materials should be addressed to M.H. (email: [michael.higgins@strath.ac.uk](mailto:michael.higgins@strath.ac.uk))

## Introduction

Keeping track of the relationship between politics and media is a key part of democratic thought; crucial not just to overseeing the workings of government, but also in comprehending the limits and possibilities of political discourse in the public sphere. Recently, much research has explored the extent to which the imperatives of the communications industry exercise a “mediatising” influence on political actors and institutions, where “media logics” become a negotiated component of the grammar of everyday political activity (Esser and Strömbäck, 2014; Higgins, 2018). Beyond even the democratic institutions of the West, this compulsion towards media spectacle extends to the purposively-mediated atrocities of terror groups such as ISIS (Harmanşah, 2015).

In this context, an increasing body of research is focussing on the rise of populism. Initially associated with the class movements of the early to mid-twentieth century (Kazin, 1998; Laclau, 1977), populism has latterly become associated with the political activities of the right. Its use often compromised by what Brants (2004, p 126) describes as “conceptual vagueness”, populism is most recognisable in its root commitment to a virtuous “people” in preference to those within the political, economic and bureaucratic cadres of the elite (Canovan, 1981). Usually although not exclusively associated with charismatic political actors such as Berlusconi in Italy and Trump in the USA, the contemporary iteration of populism has spread across Europe (Niemi, 2013), the United States (Guardino and Snyder, 2012) and Southeast Asian (Chakravarty and Roy, 2015). Even prior to the social media platforms we discuss later, Mudde (2014) talked of the emergence of a “populist zeitgeist” across political cultures.

As a way of discussing how politics and media operate together within this developing political environment, what we call “mediated populism” has, therefore, excited attention across academics, policy-makers and political commentators. This work has looked not just at the communicative strategies of politicians committed to a populist ethos, but also at how populism is mediated more broadly. Chakravarty and Roy (2015, p 313) describe mediated populism as the imperatives of populism coming to prominence in a “new logics of political communication”. Over the course of this short paper, I want to foreground a number of factors that should inform our understanding of mediated populism, and take the opportunity to highlight some of the ways this relates to existent interests in the study of media and communications.

## Populism and political conditions

The majority of recent studies of populism in media have concentrated on its foothold amongst the political right, and its alignment with discourses around anti-immigration and neoliberalism (Wodak et al., 2013; Albertazzi and McDonnell, 2017). This clustering of populist activity has occasioned such expanded descriptions as “right-wing populism” (Burack and Snyder-Hall, 2012) as well as references to a “neo-populism” associated with the various libertarian monetarists (Mazzoleni et al., 2008). Burack and Snyder-Hall (2012, p 440) trace this current swell in populism on the right to a backlash against government intervention into “private and semi-public corporations” after the financial crash of 2007, feedings an anti-state agenda exploited and aided by right-wing media radio hosts dedicated to fostering disillusionment with institutional politics (Mort, 2012). In structural terms too, Aalberg and De Vreese (2017) suggest that weaker party organisation among the extreme right has produced a greater dependence on media to compensate for a lack of local party workers. Combined with what Mudde (2014) portrays as the right’s willingness to embrace popular media preferences for “drama” over leaden policy statements, there are fertile grounds

for the gratuitous use of populist rhetoric in the right-wing’s pursuit of common cause with the electorate.

However, Laclau’s (2005, p 129) account of populisms of the past shows the possibility of alternative orientations towards populism in the “strategic aims” of parties on the political left, including his own account of the Italian Communist Party. When looking at the incidences of populism across the political spectrum, we can see that obstacles to political effective political campaigning are of as much importance as political ideology. In common with the examples of the right referred to above, Jeremy Corbyn’s UK Labour Party entered the campaign for the 2017 general election challenged by internal institutional strife and beset by hostility from the majority of media outlets. For all this, the projection of Corbyn’s anti-establishment persona at public events, combined with populist-related themes of popular empowerment, produced substantial electoral gains. However, whereas the right ring populism described above is able to rely upon a sector of media for explicit support (Mort, 2012), Corbyn allied themes of popular unity with a virtuous dependence on coverage of what Boorstin (1961, p 9) describes as the “pseudo-events” of rallies and speeches.

Of course, in addition to the status of the political actors, populism is contingent upon shifts in the prevailing political hegemony. Pasquino (2008, p 37) identifies the perception of “an overall condition of unease within western electorates”. Rather than the production of some spontaneous and choreographed disillusionment among the people, we are witness to the retreat of the state from public service allied to its redirection towards implementing economic austerity (Burack and Snyder-Hall, 2012), and the brute emphasis on bureaucracy endemic in “the technology of the mass party” (Pasquino, 2008, p 38). As well as showing an understanding its historical flexibility, an informed study of populism must therefore attend to developments in the political and cultural environment within which it draws sustenance, including a substantial focus on the media’s representation of the state of politics (Wodak, 2009). As we have seen exploited by populists from both right and left, this disillusionment extends from political culture to the circumvention of conventional news media.

## The persistence of populism

It is, therefore, useful to think of populism not as a political doctrine, but as an underlying relational attitude that is manifest in primarily oppositional forms of political rhetoric that can be directed against or in tactical collaboration with media. In Laclau’s (2005) terms, populism is “hollow” of political principles and ideologies as such, and instead provides a motivating basis for political action, or at least the expression of a suitable political rhetoric. However, in parallel with political conditions of disillusionment, the contrast provided by Pasquino’s (2008) bureaucratisation of the political establishment, set against longer-term shifts in media culture and technology towards the democratisation of production, seems likely to continue to produce fertile conditions for populist discourse; not least in admitting what Habermas (1989) refers to as the experiential language of the “lifeworld” to public discourse on politics.

In thinking about the pervasiveness of populism and its links to political crisis and to technological and cultural change, Mazzoleni (2008, p 57–58) refers to “the populist contamination of political discourse”, the chief symptom of which is a new “master frame” of political discourse. In coming to dominance, populism offers a political conceit of popular representativeness and authenticity to which other political actors and institutions become answerable. Far from giving us leave to dismiss populism as another rhetorical fad, this should alert us to the adaptability

and sustainability of populism tropes across media platforms and through political cycles.

### Populism and emotionality in media

The introduction promised to identify themes in mediated populism, and we look first to the rise of emotionality in media. Scannell (1996) argues that the compulsion of unscripted performance in broadcast media in particular has always been towards projecting an outwardly empathetic relationship with the individual audience member in a “sociable” arrangement. In media’s pursuit of news values too, empathy and emotional competence have become increasingly prominent (Richards, 2007; Wahl-Jorgensen, 2017, forthcoming). Lunt and Stenner (2005), for example, point to the development of a virtual “emotional public sphere”, the illusion of which has been exemplified in confession and disclosure-based public participation programming. In a manner that echoes Montgomery’s (1999) analysis of the mediated, performed sincerity of politicians in public, an emotional public sphere intervenes in and reconfigures hierarchies of legitimacy, such that responses and contributions are weighed according to their success in producing a display of emotional commitment.

As to the tenor of this emotion, recent work on “belligerent broadcasting” (Erikson, 2014; Higgins and Smith, 2017) has highlighted the particular rise of anger and indignation as legitimate performative expressions in media. Similar expressions of this anger provide the emotional drivers of much contemporary populist discourse in media and elsewhere (Wahl-Jorgensen, 2017, forthcoming). In this context, populism panders to media expectations by ventriloquising the frustration of the people with those disinterested or corrupt elites that are presented as exercising arbitrary power over their lives: the righteous “indignation” of the public (Higgins, 2013). While this use of indignation is often apparent in even the most benign and opportunistic uses of populist rhetoric, such as its limited use of populism by UK Conservatives (Higgins, 2013), it is more to the fore among overt populists such as Sarah Palin (Higgins, 2009) and the current US President Donald Trump (Higgins and Smith, 2017, p 93; Wahl-Jorgensen, 2017, forthcoming).

### Towards the media logics of populism

As Mazzoleni (2008) points out, the analysis of mediated populism is answerable to the histories, norms, limits and possibilities of media technology. Having argued that populism moves in accord with the emotional turn in media culture, it is also useful to consider media’s internal generic development, as well as its technological affordances. We have already referred to the compulsion of unscripted broadcasting to account for the norms of sociability (Scannell, 1996), but the technical and conventional demands of media extend far beyond these partial and context-specific efforts at para-social interaction. For one thing, in generic terms there are various and often conflicting priorities across entertainment and news-driven genres, with varying levels of compatibility with populist discourses (Mazzoleni et al., 2003). In terms of how these engage with political content more broadly, Street et al. (2017) identify a coming to dominance of genres conventionally associated with entertainment, markedly in the sketch-based satire of the left (Jones, 2010) and the populist talk radio of the right (Higgins, 2008: 65; Mort, 2012).

However, the truly paradigmatic shift in media, technology and culture over the past few decades have been towards participation and interactivity. There is, first of all, what Livingstone and Lunt (1992) identified as the beginnings of a move in broadcasting towards giving a voice to members of the public; routinely, as Fenton et al. (1998) have noted, in a manner designed to

emphasis “ordinary” over “expert” voices. There is also the increasing realisation of Berners-Lee’s original vision of a fully-interactive internet in the development of Web 2.0., producing an online environment dominated by user-engagement and expression. Along with the emotionalisation of the public sphere, this sees the language of everyday argument come to prominence in online discussion of politics and current affairs, occasionally manifest in the personalised abuse of political trolling (Higgins and Smith, 2014).

Much of the work into the relationship between politicians and celebrity has stressed this shift towards engagement in social media and the performed “authenticity” of language and style that is markedly non-political (Wheeler, 2013). In understanding the consistency and intensity of these personas and how they join in the emotive language of social media, it is important to remain alert to Stanyer et al. (2017) distinction between overtly populist politicians such as Donald Trump, and those politicians, including Jeremy Corbyn, that draw upon populist discourses more selectively on the basis of their circumstances, deploying their underdog status as part of an outsider-themed communicative strategy.

### The populism of Twitter

As we have argued, in a manner that gathered pace in the 2008 Obama campaign (Levenshush, 2010), political communications has become dependent on social media for gathering and organising support, as well as for conveying consistent political slogans and themes. However, the 2016 campaign of Donald Trump for the US presidency made more use of the microblogging platform Twitter to exploit an incendiary and “straight-talking” public persona (Higgins and Smith, 2017). In the management of this political presence after victory, his personal and long-standing @realDonaldTrump account has maintained some separation from the official @POTUS account. In a manner that distinguishes his authentic and spontaneous self from his official capacity, @realDonaldTrump is used to combine personal and political sentiments, while announcing policy intentions in a manner previously associated with the elite environment of the White House press briefing. While neither account is committed to decorum in conventional political terms, @realDonaldTrump remains an expressive embodiment of Trump’s pre-election anti-political mode.

Oborne and Roberts (2017: xxvii) write of the populist qualities of Trump’s choice of media platform:

Twitter is an ideal medium for appealing to any supposed “silent majority”. It is completely democratic. Anyone can join, at no cost. There are no restrictions and no filtering (except in rare extreme cases). Twitter allows a candidate to appeal at a personal level to anyone who is against anything and make him or her feel like part of a vast shared community without having to meet or even acknowledge any of its other members.

As well as the aura of popular participation and frank expression that surrounds the platform of Twitter, there is the brevity of expression associated with the platform, where Trump rarely exceeds the 140 character limit of a fully visible Tweet. This has two implications for our understanding Trump’s relationship with mediated populism. We have already noted that his choice of language and theme is designed to produce a form of popular appeal, based on the expression of an anti-politics from a character positioned outside of the political mainstream. One of his favoured themes of this account is to malign “expert” voices, in-so-doing extending the cursed “establishment” to include dissenting climate scientists and economists, all to the detriment of

the quality of public discourse. As well as this, in his appropriation of Twitter, one of the prominent parts of Trump's expressive strategy is inherently short-form, leaving limited room for reasoning and nuance beyond the initial declaration or emotional outburst. In a relevant study of soundbites in a television context, Scheuer (2001) argues they produce simplified arguments, dependent upon existing popular prejudices. Rather than the more complex explanations required by proponents of regulation and collective responsibility, Twitter form will tend to suit the libertarian right-wing and proponents of small government.

Of course, Twitter allows any number of responses, to which the original poster can reply. However, Trump's default refusal to engage in these dialogic capabilities of Twitter (Osborne and Roberts, 2017) accords with the findings of Larsson and Moe (2011, p 741) that the political discourse of the platform favours one-way dissemination over debate. Conveniently, this use of Twitter as the carrier of short, non-cohesive declarations subsumes even the internal contradictions of Trump's populism—such as his statism, against the populist right's commitment to small government—within a montage of purposeful incoherence.

### Dismissing mainstream media—"fake news"

Above, we discussed Jeremy Corbyn's use of what might be described as "pseudo-events" (Boorstin, 1961) to negotiate past a hostile media agenda. This claimed antagonistic relationship with the media establishment is an important component to much mediated populism. And as the online communicative tactics of ISIS show (Harmansah, 2015), ease of access to Twitter is in keeping with the enactment of even a grotesque mutation of outsider politics. Returning to the example of Trump, the range of his populist vitriol extends to this "mainstream media", which his rhetoric holds accountable for the production of "fake news". Properly defined, fake news refers to invented news stories that are passed off as genuine (Wardle, 2017), the spread of which are owed to a combination of the democratisation of information media production and the deprofessionalisation of formal news gathering. As such, argues Wardle (2017), fake news is as much a product of a participatory "information ecosystem" as a conscious disaffection with conventional authority. Addressing how the term is used in informed discussion, Corner (2017) warns against conflating the production of "fraudulent media product" we see in fake news as defined by Wardle (2017) with the distribution of the range of politically contestable but entirely legitimate material that defines an agonistic political public sphere.

Nonetheless, purposively ill-defined accusations of fake news—a term Trump frequently incorporates into a Twitter hashtag—are essential to Trump's populist persona as an anti-politician that is under siege from the old order; giving him warrant to brandish this label to demean inconvenient content of good standing. Yet, for all its misuse as a description, it is useful to keep in mind that the production of fake news is a useful tactic of dark political campaigning, and that recent studies have shown that its distribution is as much a tactic of the political left as it is the right (BBC, 2017). Even so, in presenting opportunities for bias conformation and the easy dismissal of elite discourse, the accusatory powers of fake news accord with the populist drive to include recalcitrant media in any vision of the corrupt rulers.

### Conclusion

As Mazzoleni (2008) argues above, as long as it remains a successful political strategy and appeals to dominant narratives of government and political power, much of mediated politics is likely to remain answerable to populism. To some extent, populism's prominence is contingent upon some measure of

approval for those charismatic leaders that often animate its sentiments or to the continued incorruptibility of those movements that lay claim to the virtues of popular alignment, although we have noted that these vary in their political character. We also have to consider the staying power of populism as the basis for a style of persuasive political engagement. As a corrective to the claims outlined above for populism's adaptability, just as political rhetoric is conventionally obliged to avoid appearing political (Martin, 2014, p 3), so this limitation may equally apply to populist claims to authenticity and popular alignment. Aside even from what Enli (2014) identifies as the always-shifting terms of mediated authenticity, as we reach a point at which a populist affection becomes a convention of political exchange, it may well become what Rogers (1981, p 42) dismisses as "debased currency".

In the meantime, we meet those qualities that have come to dominance in this iteration of populism: a politics that is angry rather than conciliatory in tone, and oppositional rather than constructive as to the potential of government. In seeking an alternative for populism, the media-politics nexus might comprehend and exploit the advantages of both populism and news's commitment to emotive vitality, and seek to draw upon news values in different and creative ways: productively exploiting the journalistic appetite for human interest and positivity. In short, a media discourse engaged in an alternative to populism might reconsider formal commitments to objectivity and balance, and presume to select and accentuate the key principles of democratic belonging.

Alternatively, there are already strains of this in the conventional practice of journalists placing their neutrality aside and pursuing an agenda on behalf of their perceived "public" (Montgomery, 2007; Higgins, 2008). In this regard, media might contribute to a shared political culture through a exercising a greater and publicly-sanctioned ferocity in its defence of the values of competent and truthful government, elected by and held accountable to an informed democratic polity. Going forward, any such news cultures should be as expressively robust as populism and as exploitative of new media: unabashed in their commitment to environmental care, to freedom with responsibility, and to the abiding principles of human decency.

Received: 31 July 2017 Accepted: 4 September 2017

Published online: 24 October 2017

### References

- Aalberg T, De Vreese CH (2017) Introduction: comprehending populist political communication. In: Aalberg T, Esser F, Reinemann C, Strömbäck J, De Vreese CH (eds) *Populist political communication in Europe*. Routledge, London, p 1–11
- Albertazzi D, McDonnell D (eds) (2017) *Twenty-first century populism: The spectre of Western European democracy*. Palgrave, Basingstoke
- BBC (2017) The rise of left-wing, anti-Trump fake news. *BBC Trending*. At: <http://www.bbc.co.uk/news/blogs-trending-39592010>
- Boorstin DJ (1961) *The image, or what happened to the American dream*. Atheneum: New York, NY.
- Brants K (2004) Review of Mazzoleni *et al* The media and neo-populism. *Eur J Commun* 20(1):124–126
- Burack C, Snyder-Hall RC (2012) Introduction: right-wing populism and the media. *New Pol Sci* 34(4):439–454
- Canovan M (1981) *Populism*. Junction, London
- Chakravartty P, Roy S (2015) Mr Modi goes to Delhi: mediated populism and the 2014 Indian elections. *Telev New Media* 16(4):311–322
- Corner J (2017) Fake news, post-truth and media-political change. *Media, Culture and Society*. At: <http://journals.sagepub.com/doi/abs/10.1177/0163443717726743>
- Enli G (2014) *Mediated authenticity*. Peter Lang, New York, NY
- Erikson G (2014) See the error of your ways: belligerent expertise and the curative power of 'tough love'. *Int J Cul Stud* 17(6):573–589

- Esser F, Strömbäck J (eds) (2014) *Mediatization of politics*. Palgrave, Basingstoke
- Fenton N, Bryman A, Deacon D, Birmingham P (1998) *Mediating social science*. Sage, London
- Guardino M, Snyder D (2012) The Tea Party and the crisis of neoliberalism: mainstreaming new right populism in the corporate news media. *New Polit Sci* 34(4):527–548
- Habermas J (1989) *The theory of communicative action, vol 2: Critique of functionalist reason*. Polity, Cambridge
- Harmanşah O (2015) ISIS, heritage and the spectacles of destruction in the global media. *Near East Archaeol* 78(3):170–177
- Higgins M (2008) *Media and their publics*. Open University Press, Maidenhead
- Higgins M (2009) Populism and security in political speechmaking: the 2008 presidential campaign. In: Marsden L, Savigny H (eds) *Media, religion and conflict*. Ashgate, Aldershot, p 129–144
- Higgins M (2013) Governmentality, populism and empowerment: David Cameron's rhetoric of the big society. In: Scullion R, Gerodimos R, Jackson D, Lilleker D (eds) *The Media, political participation and empowerment*. Routledge, Abingdon, p 58–70
- Higgins M (2018) Mediatization and political language. In: Wodak R, Forchtner B (eds) *The Routledge handbook of language and politics*. Routledge, London, p 383–397
- Higgins M, Smith A (2014) Disaffiliation and belonging: Twitter and its agonistic publics. *Sociologia e Politiche Sociali* 17(2):77–89
- Higgins M, Smith A (2017) *Belligerent broadcasting: Synthetic argument in broadcasting*. Routledge, London
- Jones JP (2010) *Entertaining politics: Satiric television and civic engagement*, 2nd edn. Rowman and Littlefield, Lanham
- Kazin M (1998) *The populist persuasion: an American history (revised edition)*. Cornell University Press, Ithaca
- Laclau E (1977) *Politics and ideology in Marxist theory*. Verso, London
- Laclau E (2005) *On populist reason*. Verso, London
- Larsson AO, Moe H (2011) Studying political microblogging: Twitter users in the 2010 Swedish election campaign. *New Media Soc* 14(5):729–747
- Levenshus A (2010) Online relationship management in a presidential campaign: a case study of the Obama campaign's management of its internet-integrated grassroots efforts. *J Pub Relat Res* 22(3):313–335
- Livingstone S, Lunt P (1992) *Talk on television: Audience participation and public debate*. Routledge, London
- Lunt P, Stenner P (2005) The Jerry Springer Show as an emotional public sphere. *Media Cult Soc* 27(1):59–81
- Martin J (2014) *Politics and rhetoric*. Routledge, London
- Mazzoleni G, Stewart J, Horsfield B (eds) (2003) *The media and neo-populism: a contemporary comparative analysis*. Praeger, Westport, CT
- Mazzoleni G (2008) Populism and the media. In: Albertazzi D, McDonnell D (eds) *Twenty-first century populism: The spectre of Western European democracy*. Palgrave, Basingstoke, p 49–64
- Montgomery M (1999) Speaking sincerely: public reactions to the death of Diana. *Lang Literature* 18(1):5–33
- Mort S (2012) Tailoring dissent on the airwaves: the role of conservative talk radio in the right-wing resurgence of 2010. *New Polit Sci* 34(4):485–505
- Montgomery M (2007) *The discourse of broadcast news*. Routledge, Abingdon
- Mudde C (2014) The populist zeitgeist. *Gov Oppos* 39(4):541–663
- Niemi MK (2013) The True Finns: identity politics and populist leadership on the threshold of the party's electoral triumph. *Javnost-Public* 20(3):77–92
- Osborne P, Roberts T (2017) *How Trump thinks: His tweets and the birth of a new political language*. Head of Zeus, London
- Pasquino G (2008) Populism and democracy. In: Albertazzi D, McDonnell D (eds) *Twenty-first century populism: The spectre of Western European democracy*. Palgrave, Basingstoke, p 15–48
- Richards B (2007) *Emotional governance: politics, media and terror*. Palgrave, Basingstoke
- Roger I (1981) Rhetoric and ritual politics. In: Paine R (ed) *Politically speaking*. ISHI, Philadelphia, p 41–64
- Scannell P (1996) *Radio, television and public life*. Blackwell, Oxford
- Scheuer J (2001) *The sound bite society: How television helps the right and hurts the left*. Routledge, New York, NY
- Stanyer J, Salgado S, Strömbäck J (2017) Populist actors as communicators or populist communicators: cross-national findings and perspectives. In: Aalberg T, Esser F, Reinemann C, Strömbäck J, De Vreese CH (eds) *Popul Polit Commun Europe*. Routledge, London
- Street J, Inthorn S, Scott M (2017) *From entertainment to citizenship: politics and popular culture*. Manchester University Press, Manchester
- Wahl-Jørgensen K (2017) *Emotions, media and politics*. Polity Press, London, (in press)
- Wahl-Jørgensen K (forthcoming). *The angry populism of Donald Trump*. Media, Culture Society
- Wardle C (2017) Fake news: it's complicated. *First Draft*. At: <https://medium.com/1st-draft/fake-news-its-complicated-d0f773766c79>
- Wheeler M (2013) *Celebrity politics*. Polity, Cambridge
- Wodak R (2009) *The discourse of politics in action*. Palgrave, Basingstoke
- Wodak R, Knosravi-Nik M, Mral B (eds) (2013) *Right-wing populism in Europe*. Bloomsbury, London

### Additional information

**Competing interests:** The author declares no competing financial interests.

**Reprints and permission** information is available online at <http://www.nature.com/reprints>

**Publisher's note:** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.

© The Author(s) 2017