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Metadiscoursal Realisation of Pragmatic Strategies @ResearchProject Twitter Accounts

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To ensure the global communication and visibility of their work, international research groups leverage online settings and endorse specific digital academic practices. Twitter as a Social Medium for Research Dissemination Purposes has become an effective outlet to widely disseminate the development, knowledge production and findings of research projects. As a result, research groups implement pragmatic strategies that respond to three overarching communicative intentions—informative, promotional and interactional—and use metadiscursive markers within them to establish links with the audience. This paper analyses these practices by investigating the metadiscoursal realisations of a taxonomy of twenty-seven data-driven pragmatic strategies in ten Horizon2020 research project Twitter accounts. First, we propose metadiscursive adjustments for the digital environment of Twitter. Then, we use NVivo12 to identify salient metadiscourse features which help to realise the pragmatic strategies. In general, interactional metadiscursive features predominate over interactive ones, and we find attitude markers, self-mentions and directives to be the characteristic markers in, respectively, informative, promotional and interactional strategies. Moreover, some metadiscourse categories are found to rely on non-verbal markers for their realisation. The present analysis expands the understanding of complex digital discursive practices developed by researchers aiming to disseminate their results, account for their funding, make themselves visible and engage multiple audiences.

Keywords: Twitter; Social Media for Research Dissemination Purposes; academic tweets; scholarly discourse; pragmatic strategies; metadiscourse framework

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La realización metadiscursiva de las estrategias pragmáticas en cuentas de Twitter de @ProyectosdeInvestigación

Para garantizar la comunicación global y la visibilidad de sus investigaciones, los grupos de investigación internacionales hacen uso de entornos digitales y recurren a prácticas académicas específicas en la red. Twitter como medio social con fines de diseminación de la investigación se ha convertido en un modo eficaz para difundir ampliamente el desarrollo de los proyectos, la producción de conocimiento y los resultados de las investigaciones. Para ello, los grupos de investigación hacen uso de estrategias pragmáticas que responden a tres intenciones comunicativas generales—informativa, promocional e interactiva—, así como de marcadores metadiscursivos dentro de estas para establecer vínculos con la audiencia. El artículo analiza estas prácticas centrándose en la realización metadiscursiva de una taxonomía de veintisiete estrategias pragmáticas obtenidas del análisis de diez cuentas de Twitter de proyectos Horizonte2020. En primer lugar, proponemos algunos ajustes metadiscursivos para su aplicación al análisis de tuits. A continuación, identificamos los rasgos metadiscursivos más destacados que instancian las estrategias pragmáticas utilizando NVivo12. En general, los rasgos metadiscursivos interaccionales predominan sobre los interactivos, siendo los marcadores de actitud, las automenciones y los imperativos los más característicos en las estrategias informativas, promocionales e interaccionales, respectivamente. Además, se observa que algunas categorías metadiscursivas se realizan a través de marcadores no verbales. Este análisis contribuye a la comprensión de las complejas prácticas discursivas digitales de los investigadores para difundir sus resultados, dar cuenta de su financiación, hacerse visibles y atraer a múltiples audiencias.

Palabras clave: Twitter; redes sociales para fines de diseminación de la investigación; tuits académicos; discurso en el ámbito de la investigación; estrategias pragmáticas; marco del metadiscurso

1. Introduction

Researchers are increasingly encouraged by their affiliates and by external institutions to foster the global dissemination of their knowledge production and to ensure the visibility of their findings (e.g., Bondi et al. 2015; Puschmann 2015; Engberg and Maier 2020; Plo and Corona 2023). This is particularly expected when working collaboratively in groups and on projects, and when receiving public funding from competitive frameworks and international entities (Lorés-Sanz and Herrando-Rodrigo 2020; Gerturdix et al. 2020; 2021). The Horizon2020 European program (henceforth H2020) was considered, at the time, the most ambitious and impactful funding program for the development of research and innovation in Europe. A requirement for projects funded within such public expenditure frameworks is that they have to design,

elaborate and implement a Plan for the Exploitation and Dissemination of Results (PEDR), which needs to be crafted and put into action. Specifically, the dissemination of new information and scientific output related to EU-funded research projects "should aim to demonstrate the ways in which research and innovation is contributing to a European Innovation Union and account for public spending by providing tangible proof that collaborative research adds value" (European Commission 2012, 5).

Research groups thus need to develop new discursive practices and digital literacies. In carrying out their dissemination plans, international research project members overtly resort to digital texts and platforms which facilitate their work and enable them to have higher impact and outreach, resulting in beneficial long-term effects in their careers. These trends in the ways researchers and professionals are involved in communicating their investigations is triggering a spectrum of digital writing practices that merit being studied from linguistic and discursive perspectives (Pontrandolfo and Piccioni 2021; Mur-Dueñas and Lorés 2022). Such analyses can provide scholars and scientists with a great deal of information about how to improve their dissemination plans in order to reach more diverse audiences. The aim of this paper is to carry out an analysis of pragmatic strategies and their realisations in the Twitter accounts of research groups who also maintain research project websites for the dissemination of their international research projects.

The use of Social Media for Research Dissemination Purposes is openly promoted in order to circulate information and transmit results immediately and globally. Social media are digital spaces for scientists and scholars to publicise their research outcomes and contribute to the fostering of a participatory culture. Of such platforms, Twitter (recently renamed as X) is favoured by international research groups to broaden their outreach, disseminate their outputs among different stakeholders and widely report the progress of their projects to potentially diversified readers. This social medium provides an outlet for communicative purposes which traditional publishing does not meet, from personal reflections to the promotion of researchers' work. Tweets can be maximised to mediate in the everyday routines of professional research work and connect users, collaborators and beneficiaries (Kuteeva 2016, 440), which contributes to enhancing researchers' e-visibility and forging a digital collective identity. In this particular scenario of international research, tweets also enable research groups to be held accountable, demonstrating to the financing institutions and to the general public how they are fruitfully developing their investigation and spending public funding.

In light of the above, it is worthwhile to investigate, from a discursive viewpoint, current digital practices in Twitter accounts held by international research groups working together on collaborative projects. In this paper we seek to focus on metadiscourse features to understand how research groups use their tweets to create their authorial presence, to display their evaluation and judgements and to build diverse ways of textual interaction with heterogeneous users. By looking into the metadiscoursal realisations of salient pragmatic strategies, insights will be gained into

digital scholarly discourse and into the discursive mechanisms employed to accomplish given communicative purposes. Our research thus responds to the need for more qualitative and more interpretative approaches to investigating the how and why of scholarly Twitter behaviour in academic contexts (Veletsianos 2016). In particular, our aim is to provide answers to the following research questions:

1. What adjustments are needed to integrative, interactive taxonomies of metadiscourse, as applied to the analysis of traditional academic discourse, when exploring digital academic discourse in Twitter research project accounts?

2. Which metadiscourse categories and markers are characteristic of the pragmatic strategies regularly deployed by international research projects in their Twitter accounts?

3. How do prominent metadiscourse categories contribute to the overall communicative functions of Twitter for Research Dissemination Purposes (TRDP)?

To do so, we will undertake a corpus-based, data-driven analysis of our EUROPROtweets Corpus in order to examine international scientists' digital communication practices.

2. Theoretical Framework

In this section, we first discuss the object of study, Twitter, as an instance of how social media can be instrumental and effective in research environments. Then, we revisit the framework of metadiscourse—which, in section 4, we apply to Twitter in our analysis—emphasising its extensive areas of application and the need for its adaptation to digitally-mediated communicative contexts and to the analysis of digital discourse.

2.1. Social Media for Research Dissemination Purposes: Twitter

The advent and continuous development of social media have, in general, extended channels of communication between interactants and increased the ways and resources which can be employed in the digital medium. Social media in general "do not simply offer an alternative way of engaging in the same forms of communicative interaction that were available prior to their emergence; they also provide a number of notably different communicative dynamics and structures" (Seargeant and Tagg 2014a, 2). These dynamics and structures entail groundbreaking rules in digitally-mediated communication, and enable users to take novel roles as active producers, responding to or generating content. Digital spaces for social networking involve various complex phenomena such as shareability, collaboration, persuasive rhetorical

actions, the informalisation of public discourse, the commodification of information and identity construction processes (Petroni 2019). Such identity construction processes have social and psychological implications in that social media users move from being isolated selves to networked selves so their identities are primarily negotiated and performed through being interspersed with other social connections (Papacharissi 2011).

Part of the change in the communication paradigm brought about by social media, and in terms of users' practices and expected performance, lies in the understanding of who constitutes the *audience*, and in how users address each other when interacting online. In this sense, Lomborg (2011, 56) contends that social media "facilitate not only classic broadcasting through one-to-many communication, but also one-on-one and many-to-many forms of communication, thus implying a more distributed agency." Audience, then, is in this context a more complex entity than that of readership, and is often imagined and constructed by users in order to appropriately present themselves on the basis of the technological affordances and immediate social context of the medium in question (Marwick and Boyd 2010).

Even when social media still frame conventional outputs that scholarship considers as "primary" (Puschmann 2015), they are increasingly used in research contexts to further academic and professional reach. Researchers can easily disseminate their outcomes and target diverse publics (Collins et al. 2016) by sharing and transferring scientific knowledge through social media. As such, social media are used to promote interaction and collaboration among scientists and researchers as well as to communicate with wide audiences, including a variety of stakeholders and interest groups. The positive characteristics of Social Media for Research Dissemination Purposes allow individual researchers and collective research groups to build communicative bridges among national and international scientific and academic communities, and between these and the lay public, offering unprecedented professional sharing opportunities.

Of the extensive array of social media at professionals and scholars' disposal—Facebook, Twitter, LinkedIn, ResearchGate, YouTube, Instagram, Tumblr and Twitch, to name some of the most popular ones—Twitter is probably the fastest-evolving and most prolific social networking site used in various academic and scientific contexts (Gertrudix et al. 2021; Pascual and Mur-Dueñas 2022). Researchers' preference for Twitter may also be a consequence of the in-between nature of this social medium to combine work-related and daily-life issues, and of its dynamicity, immediacy and addressivity in the way users can interact (Pascual et al. 2020).

Using Social Media for Research Dissemination Purposes requires the development of professional profiles, which entail complex discursive practices to communicate and transfer specialised knowledge. These practices endorsed by researchers using Twitter ultimately respond to their communicative goals and to particular social actions. The potential for transferring such knowledge is maximised by these users when putting into practice the polyfunctional affordances offered by Twitter—e.g.,

mentioning, retweeting, hashtagging, liking and saving content. In this way, scientists can participate further in the dynamic nature of this social network, and may prioritise an emphasis on linkable content and interactive texts. Likewise, the updates in Twitter by individual researchers and research groups and institutions may be geared towards publicising their own investigations, activities and outputs in a similar 'marketing' manner as prevails in other commercial, political or societal spheres (Mahrt et al. 2014). In tweets by research groups, all these purposes are undertaken through an array of pragmatic strategies responding to overarching communicative intentions, which are informative, promotional and interactional in nature, and are employed purposefully to foster their identity, make themselves visible and potentially interact with their audience (Pascual 2023).

Therefore, Twitter, as a venue with great potential for research dissemination and communication, needs to be explored from diverse discursive and linguistic angles. One of them involves metadiscourse, as it is a predominant area of interest in academic communication which has historically involved offline texts, but is rapidly incorporating digital practices.

2.2. Metadiscourse in Academic Texts: Moving towards Digital Discourse

Metadiscourse frameworks (Hyland and Tse 2004; Hyland 2005; Ädel and Mauranen 2010) have been widely applied to traditional academic genres, taking cross-disciplinary, cross-cultural and cross-generic perspectives. These metadiscourse analyses have revealed the characteristic lexico-grammatical conventions of academic discourse in particular genres and across diverse languages, responding to expected ways of expressing meaning in situated contexts and social actions in academia. Metadiscourse features have been shown to play a crucial role in presenting information in such a way that it is not only intelligible and understood by readers, but also accepted by them, meeting their expectations and requirements (Hyland 2005). Metadiscourse conditions and, in turn, is conditioned by the particular writer-reader relationship established through the text, which needs to be framed within a broad socio-cultural context (Mur-Dueñas 2011).

The field of metadiscourse studies is dominated by analyses of academic discourse involving scholars' primary output (Puschmann 2015), especially research articles and abstracts. As Hyland (2017, 27) states, "[a]lthough more recent work has branched into less well-trodden areas of academia, […] there is a serious danger that the approach might remain too closely associated with the description of a limited range of text types and fail to realise its potential as a systematic means of gaining insights into participant interaction more generally." The metadiscourse framework has recently, therefore, come to be perceived as insufficient to account for ever-expanding digital genres and online communicative events, in which the non-verbal modes are essential carriers of meaning. This is the case with pictures in company annual reports (de Groot et al. 2016),

visual elements of academic posters (D'Angelo 2016), multimodal elements within academic lectures (Bernad-Mechó 2017) and online academic papers (Carrió-Pastor 2021). Our study of metadiscourse in TRDP seeks to widen the range of texts to which this framework can be applied. In so doing, however, the metadiscourse framework needs to be adjusted to accommodate the analysis of digital academic discourse. Such adjustments should consider the technical and communicative affordances enabled by the social medium (see section 2.1), leading to the inclusion of new verbal and non-verbal markers and the reinterpretation and reconceptualisation of the metadiscursive function of some markers.

As pointed out by Hyland (2005), metadiscourse can be seen as an open category to which new items can be added when analysing texts in different contexts. There are numerous ways through which to reveal both ourselves and our purposes in texts, and there is a potentially huge range of verbal as well as non-verbal markers which might realise these functions. This multifunctionality of metadiscourse has already been highlighted by Hyland (2005, 24), who notes that "metadiscourse cannot be regarded as a strictly linguistic phenomenon at all, but must be seen as a rhetorical and pragmatic one." Consequently, when applying metadiscourse analysis to digital discourse, visual elements and certain affordances can be taken as performing specific metadiscursive functions.

Our analysis of the metadiscoursal realisation of the pragmatic strategies used in H2020 research project Twitter accounts will take as its starting point just such an interpersonal, open and multifunctional view of metadiscourse, which triggers the need for the enlargement, adjustment and reconceptualisation of some categories and markers. This integrative view of metadiscourse was taken as the point of departure, rather than a non-integrative and reflexive one (Ädel and Mauranen 2010), because it takes a broader approach and focuses on the study of the writer-reader relationship established by means of metadiscursive features. Drawing on Hyland and Tse (2004), Hyland (2005) and Mur-Dueñas (2011), both interactive and interactional metadiscourse categories are adopted. This approach endorses a more encompassing interpersonal standpoint in the study of metadiscourse than previous studies based on the textual versus interpersonal dichotomy. As Hyland and Tse (2004, 161) argue, "all metadiscourse is interpersonal in that it takes account of the reader's knowledge, textual experiences, and processing needs." Thus, interactive metadiscourse features are intended to organise and shape the information presented in the light of the readers' likely needs and expectations, whereas interactional features are intended to portray authors and to bind them with readers pursuing similar goals and shared understandings and values (Mur-Dueñas 2011).

The interactive metadiscourse categories of our analysis comprise:

1. *Logical markers*, additive (e.g., *and*, *&*, *also*, *moreover*), contrastive (e.g., *but*, *while*, *whereas*, *yet*) and consecutive (e.g., *so*, *therefore*), which are all exclusively verbally encoded in our corpus.

2. *Code glosses*, including exemplifiers (e.g., *for example*, *such as*, *like*, *including*) and reformulators (e.g., *i.e.*, *known as*, parentheses), which can also include non-verbal examples, namely typographical markers and icons referring to a particular entity in a dual coded way—textually and visually.
3. *Sequencers*, which allow for the presentation of information in chunks and provide lists that are also realised non-verbally in the form of bullet points, arrows or numerical emojis, making use of the communicative affordances of the medium.
4. *Topicalisers*, which signal the introduction of a particular theme, which is almost exclusively realised in this type of communication by non-verbal means, especially emojis signifying objects, places and entities.
5. *Endophoric markers*, which mostly consist of cataphoric references that establish relationships between the textual and visual components of tweets (e.g., *below*, *here*, *down*). As non-verbal components, arrows and icons can also convey this function.
6. *Evidentials*, understood as addressivity markers and indicators of the source of information and encompassing direct quoted verbal speech, citation of published tweets, mentions introduced by @, retweeting and quoted tweets.

Interactional metadiscourse categories in our analysis comprise:

1. *Mitigators*, regarded as markers that not only limit the writer's full commitment to what is stated but also downplay the communicative force of information and knowledge. These downplayers are verbally encoded in digital discourse by means of auxiliary verbs (e.g., *may*, *might*, *can*, *could*, *would*), semi-modals (e.g., *appear*, *seem*), adverbs (e.g., *maybe*, *approximately*, *nearly*, *almost*) and adjectives (e.g., *likely*, *possible*).
2. *Intensifiers*, which convey certainty and conviction (e.g., *must*, *show*, *demonstrate*, *certainly*, *truly*, *fully*) and also highlight specific aspects of the information and knowledge disseminated and shared (e.g., *very*, *a great deal of*, *highly*). In this case, typographic and visual markers can play an important role, through boldface font or the full capitalisation of words.
3. *Attitude markers*, showing researchers' affective evaluation of given parameters or entities and realised mostly through adjectives (e.g., *efficient*, *competitive*, *innovative*, *unique*, *advanced*, *alarming*), but also verbs (e.g., *modernise*, *fail*, *boost*), adverbs (e.g., *rapidly*, *effectively*, *efficiently*) and nouns (e.g., *key*, *milestone*, *contribution*). This attitudinal evaluation can also be undertaken by means of non-verbal elements such as emojis.
4. *Engagement markers*, used as direct appeals to the reader, seeking to address and involve them. These comprise: a) directives—including imperatives, obligation modals and adjectival phrases expressing necessity; b) questions; c) reader references—(i) inclusive *we*, *our* and *us*, (ii) second person *you* and *your* and (iii) direct references through @; and d) exclamations. The latter category was not

found in previous accounts of metadiscourse analysis of traditional genres, as the formal nature of the academic convention may have hindered its use.

5. *Self-mentions*—explicit signals of the research project—, which encompass not only the personal references *we*, *our*, *us*, but also direct reference to the name of the project and expressions such as *The project* and *The group*.

This reconceptualisation of the metadiscourse framework applied to digital discourse in order to account for non-verbal codings that realise specific interactive and interactional functions stems from the data-driven analysis of our corpus, which is described below.

3. Our EUROPROtweets Corpus and Methods

3.1. EUROPRO Database and Digital Corpus

For our investigation of current practices in social media for research collaboration and knowledge dissemination, we selected the corpus to be used from the EUROPRO Digital Database (Pascual et al. 2020). This database was compiled for the analysis of the current digital practices in international research groups' communication of their projects and involves two principal objects of study: 1) research project websites, a well-established digital space, that are set up to comply with the demand of funding institutions providing public financing to research groups; and 2) Twitter accounts, the most representative social medium in the context of international research collaboration and academic and professional communication in general. Accordingly, two collections branch out from the EUROPRO Digital Database, namely the EUROPROwebs Database, which contains one hundred project websites from H2020 research projects, and the EUROPROtweets Database, which comprises the Twitter accounts that were actively maintained from the one hundred research projects selected in EUROPROwebs. Our vantage point from which to understand the synergies between these two digital practices is that research project websites play a 'host' (Yang 2016) role, as they are required by the H2020 PEDR. As such, they encapsulate the core information and updates of the corresponding project. In turn, social media constitute 'appendant' spaces, which are optional satellites around the host digital practices.

The study in this paper is based on the analysis of a corpus of 1,451 tweets, amounting to 36,518 running words, extracted from ten Twitter accounts of H2020 research projects from the EUROPROtweets Database (see table 1). In order to analyse such a dynamic digital practice, we retrieved all tweets posted on these ten Twitter accounts in a specified time period, namely December 2020. All the research projects selected had, in the time period chosen, come to an end, although some accounts were still active. The fact that projects had different durations (from two years and three months up to four years and six months) could partially explain the disparity in the number of tweets and words across the corpus.

TABLE 1. Description of our EUROPROtweets Digital Corpus

Research project	Twitter username (coding reference)	No. tweets	No. words	Duration of the project
Disire	@DISIRE_2020 (Tw1)	48	767	3 years 01/01/2015-31/12/2017
Dice	@diceh2020 (Tw2)	212	4,258	3 years. 7 months 01/02/2015-31/08/2018
GreenGain	@greenGain_eu (Tw3)	49	793	3 years 01/01/2015-31/12/2017
BuildHeat	@BuildHeatH2020 (Tw4)	186	5,924	4 years. 6 months 01/09/2015-29/02/2020
FieldFOOD	@FieldFOOD_H2020 (Tw5)	71	1,570	3 years 01/04/2015-31/03/2018
Cosmic	@ETN_COSMIC (Tw6)	90	1,986	4 years 01/10/2016-30/09/2020
Harmoni	@Harmoni_H2020 (Tw7)	48	1,313	2 years. 3 months 01/08/2017-31/10/2019
Flexiciency	@FLEXICIENCY (Tw8)	212	4,068	4 years 01/02/2015-31/01/2019
AGROinLOG	@AGROinLOG (Tw9)	88	1,878	3 years. 9 months 01/11/2016-31/07/2020
Simpla	@Simpla_project (Tw10)	447	13,961	3 years 01/02/2016-31/01/2019
		1,451	36,518	

As the focal point of the corpus is the discursive, digital practices endorsed by international research projects when using English as a vehicle for communication, tweets published in languages other than English (i.e., Spanish, Italian, Greek) were discarded from the present study. Retweets were incorporated in the dataset on the assumption that retweeting is a medium-dependent affordance consisting of "the re-broadcasting of another user's tweet through one's own stream, fostering a sense of ambient connection among users" (Squires 2016, 243). In this respect, most of the retweets were closely related to the research projects, being authored by members of the research groups, by sister projects within common disciplinary fields or by funding institutions when making reference to the funded projects. Thus, retweeting can be considered as a way for participants to engage in a conversation and negotiate aspects of authorship, attribution and rapport. Retweeting also enables users to publicly demonstrate a position towards the text and may be leveraged for self-branding

purposes (Gruber 2017), so it can be considered as intrinsic to the exploration of research projects' tweeting practices.

3.2. Procedure

The procedure for the study consisted of two main stages. In the first stage, all tweets were analysed following a data-driven taxonomy of twenty-seven pragmatic strategies that revolves around three macro-categories of pragmatic intention—informative, promotional and interactional (see sections 4.1, 4.2 and 4.3).[1] These different pragmatic strategies are deployed by research groups to communicate information about their projects and disseminate new knowledge and findings (Pascual 2023), and they were analysed by closely reading the corpus and systematically coding them through NVivo12,[2] as there is no automatic correspondence between pragmatic strategies and textual evidence.

Table 2. Taxonomy of Data-driven Pragmatic Strategies in Digital Practices for Research Project Communication

Informative pragmatic strategies	Promotional pragmatic strategies	Interactional pragmatic strategies
Informing about the aim of the research	Stating the benefits and impact of project research	Guiding the audience to perform an action
Stating general background of the project	Underlining relevance and value through figures	Engaging the audience to participate in the project
Giving specific details about an event	Hyping expected data and accomplishments	Inviting the audience to consume research project output
Reporting on research procedure	Highlighting members' contributions to the project	Fostering networks
Disclosing information about researchers	Spreading a piece of output	Praising and thanking others
Presenting the content of outreach	Emphasising the quality and novelty of outreach	Hooking the audience

[1] Note that a distinction needs to be made between the interactional function of pragmatic strategies and the interactional nature of the metadiscourse features used in their realisation based on the frameworks of Hyland and Tse (2004) and Hyland (2005).

[2] NVivo is a CAQDAS programme (Computer-Assisted Qualitative Data Analysis Software). It is fruitfully employed for research undertaking qualitative and mixed-methods studies and it is particularly useful for the analysis of unstructured data and complex textual practices, comprising not only the verbal mode but also audio, video and image. More information can be found at https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home.

Informative pragmatic strategies	Promotional pragmatic strategies	Interactional pragmatic strategies
Explaining audiovisual elements	Acknowledging external or self-praise	Offering contacts for information
Clarifying technical and scientific terms	Accounting for project productivity	Making information visually salient
Enumerating research- and topic-oriented elements	Claiming a project milestone	
Acknowledging research funding		

After having explored the context-sensitive pragmatic strategies in the database, the second stage involved examining the metadiscourse realisations that were characteristic of the pragmatic macro-categories and specific strategies. We proposed certain adjustments to traditional approaches to metadiscourse (e.g., Hyland 2005; Mur-Dueñas 2011), as highlighted in section 2.2, in order to adapt the analytical framework to the reality of TRDP. Innovative types and uses of metadiscourse markers were uncovered in relation to the maximisation of visual elements, especially in the case of reformulators (figure 1), endophoric markers (figure 1) and sequencers (figure 2). In figure 1 different emojis visually reformulate the meaning to refer to elements already expressed verbally—e.g., *green*, *Europe*, *Cities*—and the symbol of a white arrow boxed in blue precedes the provision of a link for users to click on, fulfilling a cataphoric function. In figure 2 numerical emojis are used to present information as chunks, visually organising it across three consecutive threaded tweets[3].

FIGURE 1. Visual Instantiation of Reformulators and Endophoric Markers in the EUROPROtweets Corpus (Tw4-5)[4]

[3] The coding system for the examples hereinafter includes two numbers. The first one refers to the research project Twitter account in the sample chosen from the EUROPROtweets Corpus. The second one is the number of the tweet within the selected account.

[4] No information on the altmetrics of the tweets was considered pertinent, since our focus is on the actual usage of the features and not on the likely effects or correlations between them and users' potential reception. Though beyond the scope of this paper, such an analysis could be very insightful to complement our results.

Figure 2. Visual Instantiation of Sequencers in the EUROPROtweets Corpus (Tw7-30, 31, 32)

Moreover, the limits of evidentials as a metadiscourse category have been expanded in our analysis of TRDP to integrate resources triggered by the affordances of this social medium. Firstly, the use of mentions to other users can be categorised as serving the function of evidentials, acting as quoted citations where the information posted is inserted in one's tweet, resulting in the original authors being explicitly disclosed and notified. Secondly, evidentials in our corpus also include retweeting, where Twitter users quote what others have said and published and include it in the feeds of their own accounts.

Finally, we added some features to the taxonomy, specifically exclamations, which can be regarded as a meaningful interactional feature that functions as an engagement marker and possibly as a response to trends in the informalisation of public discourse (Petroni 2019). Exclamations were found to attract the readership's attention when accompanied by directives and to supplement propositions aimed at amplifying knowledge about the project (figure 3). Their repetition within a tweet—used in different sentences, as in the example, or inserting several exclamation marks at the end of a sentence—is recurrent in the way research projects formulate their tweets, adding to the informality expected in this social networking site.

Figure 3. Exclamations as an Engagement Marker in our EUROPROtweets Corpus (Tw5-50)

Verbal and non-verbal metadiscursive markers were identified through close reading and coded by using NVivo12 in each of the pragmatic strategies delimited. Due to the potential multifunctionality and context dependency of metadiscourse markers (Hyland 2005), special care was taken to consider and disregard specific instances of markers which did not function metadiscoursally in the particular context in which they were found.

By using the NVivo software, the methodological consistency of the study was increased as it allowed for intercoder reliability (van den Hoonaard 2008). We attempted in this manner to avoid any subjectivity on the part of individual researchers in identifying and coding both pragmatic strategies and verbal and non-verbal metadiscursive markers. A very high degree of agreement was reached between coders—the authors of the paper—and cases of conflict were discussed, making reference to the co-text and the context in which they were inserted, as well as comparisons to prototypical examples identified, until full agreement was reached.

4. Findings and Implications

The findings of the metadiscursive realisation of the pragmatic strategies identified in our EUROPROtweets Corpus are summarised in table 3. The number and type of metadiscourse markers (realised verbally and non-verbally) in the informative, promotional and interactional macro-categories of pragmatic strategies show that there is a clear predominance of metadiscourse interactional markers over interactive ones. Interactional metadiscourse features are particularly prominent in interactional pragmatic strategies (42%), that is, when research projects try to address and engage audiences in order to raise interest in the project and encourage them to seek further information about it. However, interactional metadiscourse features are also commonly found in promotional pragmatic strategies (31%), where they are used to highlight the visibility and productivity of the research group as well as the impact of and need for the research undertaken. The three most common metadiscourse categories for each of the macro-categories of pragmatic strategies are listed in table 3, which provides information on patterns and combinations of markers in their realisation.

The most common interactive metadiscourse categories in all three macro-categories of pragmatic strategies are logical markers and code glosses (table 3). Logical markers were found unexpectedly in these brief texts, constrained by a 280-character limit, which indicates that research projects seek to provide relevant specialised knowledge and facilitate multiple audiences' understanding of it. For instance, in figure 4a, use is made of the logical marker *moreover* to link ideas explicitly, establishing the connection for readers. In order to help readers process complex knowledge, reformulators are also used. In figure 4b, these code glosses appear at the end of the tweet in the form of acronyms explained between parentheses. In figure 4c they serve to also express the verbal meaning in visual form with reference to *ideas* (using a bulb) and *commentary* (using a microphone).

TABLE 3. Overall Frequency of Use of Metadiscourse Features in the Macro-categories of Pragmatic Strategies Identified in H2020 Project Twitter Accounts

	Interactive metadiscourse markers		Interactional metadiscourse markers	
	Total number of tokens (n=1055/14%)	Salient categories	Total number of tokens (n=6303/86%)	Salient categories
Informative pragmatic strategies	215 / 3%	1. Logical markers 2. Code glosses (Reformulators) 3. Topicalisers	928 / 13%	1. Attitude markers 2. Self-mentions 3. Exclamations
Promotional pragmatic strategies	691 / 9%	1. Endophoric markers 2. Code glosses (Reformulators) 3. Logical markers	2,273 / 31%	1. Self-mentions 2. Attitude markers 3. Directives
Interactional pragmatic strategies	149 / 2%	1. Logical markers 2. Endophoric markers 3. Code glosses (Reformulators)	3,102 / 42%	1. Directives 2. Self-mentions 3. Reader mentions

FIGURE 4. Logical Markers and Code Glosses in a) Informative (Tw2-21), b) Promotional (Tw10-321) and c) Interactional (Tw4-105) Pragmatic Strategies

a)

b)

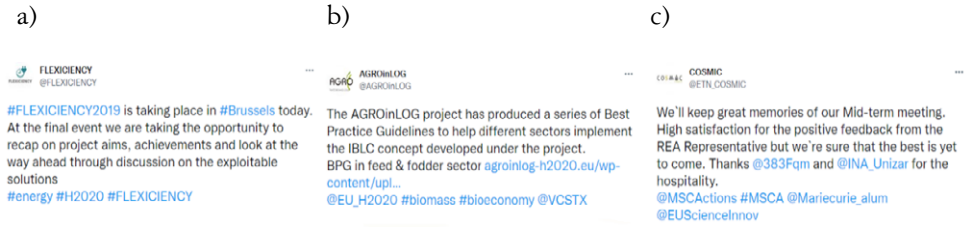
c)

As can be seen in table 3, other top categories concerning interactive metadiscursive features vary according to the macro-category. Topicalisers rank high in informative pragmatic strategies and endophoric markers in promotional and interactional ones. Topicalisers are used to contextualise research and provide details about it.

Endophoric markers, on the other hand, are strategically used by research groups to interweave verbal and non-verbal information within and across tweets.

As regards interactional metadiscourse markers, all macro-categories of pragmatic strategies involve self-mentions as one of the three predominant metadiscourse categories. It is indeed a sign that Twitter permits research groups to capitalise on their outcomes and participate in an identity construction process (Petroni 2019) that enables them to portray a collective, collaborative self-representation. Figure 5 illustrates how research groups can do this by means of different types of self-mentions, highlighting the project name with a hashtag and making it more searchable (figure 5a), recurrently mentioning the project as a recognisable collective entity (figure 5b) and resorting to inclusive *we* to underline researchers' involvement in and collaboration with the project (figure 5c).

FIGURE 5. Self-mentions in a) Informative (Tw8-8), b) Promotional (Tw9-10) and c) Interactional (Tw6-64) Pragmatic Strategies



Attitude markers are among the three most common metadiscourse categories in the informative and promotional macro-categories of pragmatic strategies, effectively evaluating the research carried out and its applications. Positive evaluation has also been found to play a key role for promotion and accountability reasons in their host research project websites (Lorés 2020). Finally, it is also remarkable that directives—as an engagement marker fostering dialogicity and interactivity—are most frequent in promotional and interactional pragmatic strategies.

4.1. Metadiscourse Markers in Informative Pragmatic Strategies

Differences across each of the informative pragmatic strategies were discerned in terms of the most prominently used metadiscourse categories, both interactive and interactional (table 3), which points to given patterns in their realisation. While some strategies are very frequent in our corpus, their use of metadiscourse is rather low. That is the case of "enumerating research- and topic-oriented elements" (with 405 examples in the corpus) and "acknowledging research funding" (with 369 examples

in the corpus), which both present minimal deployment of metadiscourse markers, showcasing instead a high use of Twitter affordances such as propositional hashtags (figure 6).

FIGURE 6. Lack of Metadiscourse Markers in "enumerating research and topic-oriented elements" Informative Pragmatic Strategy (Tw4-8)

On the other hand, metadiscourse seems to be exploited to a greater extent to convey certain pragmatic strategies, specifically "stating general background of the project," "informing about the aim of the research" and "reporting on research procedure," where, respectively, 2.08, 1.76, 1.26 metadiscourse markers per strategy were found (marked in bold in table 4).

TABLE 4. Tokens and Ratio of Pragmatic Strategies within the Informative Macro-category and their Metadiscourse Realisation

Informative pragmatic strategies (n)	Metadiscourse markers			Characteristic metadiscourse categories
	Total	Interactive/ Interactional	Average per strategy	
Enumerating research- and topic-oriented elements (405)	9	3 / 6	0.02	1. Engagement markers (Exclamations) 2. Sequencers 3. Logical markers
Acknowledging research funding (369)	13	0 / 13	0.03	1. Self-mentions 2. Engagement markers (Exclamations) 3. Attitude markers
Stating general background of the project (298)	**620**	**107 / 513**	**2.08**	**1. Attitude markers 2. Engagement markers (Reader mentions) 3. Engagement markers (Directives)**

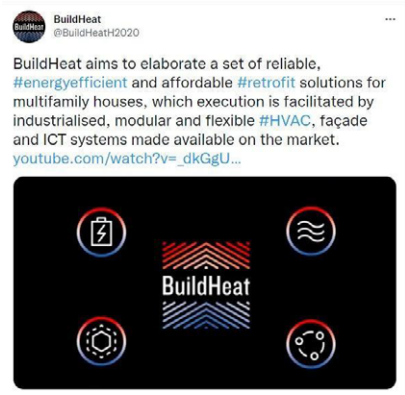
Informative pragmatic strategies (n)	Metadiscourse markers			Characteristic metadiscourse categories
	Total	Interactive/ Interactional	Average per strategy	
Giving specific details about an event (286)	106	8 / 98	0.37	1. Engagement markers (Exclamations) 2. Self-mentions 3. Attitude markers
Presenting the content of outreach (177)	134	33 / 101	0.76	1. Attitude markers 2. Self-mentions 3. Sequencers / Logical markers
Explaining audiovisual elements (112)	98	7 / 91	0.88	1. Self-mentions 2. Attitude markers 3. Engagement markers (Exclamations)
Disclosing information about researchers (96)	29	2 / 27	0.30	1. Self-mentions 2. Code glosses (Reformulators) 3. Engagement markers (Directives / Reader mentions)
Clarifying technical and scientific terms (44)	47	39 / 8	0.30	1. Code glosses (Reformulators) 2. Engagement markers (Directives) 3. Attitude markers
Informing about the aim of the research (38)	**67**	**13 / 54**	**1.76**	**1. Attitude markers 2. Self-mentions 3. Logical markers**
Reporting on research procedure (16)	**20**	**3 / 17**	**1.26**	**1. Self-mentions 2. Attitude markers 3. Engagement markers (Exclamations)**

When the general background of a research project is disseminated in a Twitter account, prominent use is made of attitude markers and engagement markers, especially reader mentions and directives. As can be seen in figure 7, the audience is directly targeted by means of second person references *you* and *your*, questions and the imperative *use*, which—together with positive attitudinal language (*hot*, *advantage*, *progress*)—point to the project topic and its likely contribution to and impact on society.

FIGURE 7. Use of Interactional Metadiscourse Markers in the "stating general background of the project" Informative Pragmatic Strategy (Tw2-31)

Attitude markers and self-mentions are frequently combined when research projects tweet about the aims of their group, as in figure 8. This informative pragmatic strategy has not been found to be very frequent in the corpus, yet it is present in all the Twitter accounts analysed, possibly because it is only employed at the beginning of the project and sometimes purposefully used as a reminder at some later points during its development. Nevertheless, it features a disproportionally high number of interactional metadiscourse markers, through which the visibility and credibility of the research group are built. This bears some similarities with the *About us* page of research project websites in which an 'impersonated e-visibility' (Lorés-Sanz and Herrando-Rodrigo 2020) is created by means of references to the project and multimodal elements that refer physically or metaphorically to the project activity.

FIGURE 8. Use of Interactional Metadiscourse Markers in the "informing about the aim of the research" Informative Pragmatic Strategy (Tw4-144)



Finally, self-mentions—instantiated through the name of the research project—, attitude markers—instantiated through evaluative adjectives—as well as engagement markers, especially exclamations, are frequent when "reporting on research procedure." The combination of these three characteristic metadiscourse categories allows research groups to accrue credibility, disclose specialised knowledge and make such knowledge accessible to a wider audience.

4.2. Metadiscourse Markers in Promotional Pragmatic Strategies

The use of interactive and interactional metadiscourse markers across the promotional pragmatic strategies identified and coded in the corpus of tweets is summarised in table 5. The most common promotional strategies tend to show an overall lower use of metadiscourse per strategy, as in the case of the most common informative pragmatic strategies. In general, however, interactional metadiscourse categories are more common in promotional strategies than in informative ones. It is in fact in the five least frequent promotional pragmatic strategies that metadiscourse use is close to or above three markers per strategy. As indicated in table 5, self-mentions and attitude markers are employed across all these pragmatic strategies—and feature among the top three metadiscourse categories—, enabling research groups to publicise or market their research, activities and outcomes. These marketing practices—characteristic of other commercial and societal contexts (Mahrt et al. 2014)—are also common in researchers' traditional publication practices and, it seems, even more so in their communication and dissemination practices enacted through digital media.

Table 5. Tokens and Ratio of Pragmatic Strategies within the Promotional Macro-category and their Metadiscourse Realisation

Promotional pragmatic strategies (n)	**Metadiscourse markers**			**Characteristic metadiscourse categories**
	Total	**Interactive/ Interactional**	**Average per strategy**	
Spreading a piece of output (220)	551	49 / 502	2.50	1. Self-mentions 2. Attitude markers 3. Engagement markers (Directives)
Accounting for project productivity (208)	555	17 / 538	2.66	1. Self-mentions 2. Attitude markers 3. Exclamations

Promotional pragmatic strategies (n)	Metadiscourse markers			Characteristic metadiscourse categories
	Total	Interactive/ Interactional	Average per strategy	
Underlining relevance and value through figures (133)	167	4 / 163	1.25	1. Reader mentions 2. Self-mentions 3. Engagement markers (Directives) / Attitude markers
Highlighting members' contribution to the project (118)	159	13 / 146	1.34	1. Self-mentions 2. Attitude markers 3. Engagement markers (Exclamations) / Topicalisers
Stating the benefits and impact of research (93)	286	37 / 249	3.07	1. Attitude markers 2. Self-mentions 3. Logical markers
Emphasising the quality and novelty of outreach (80)	**258**	**10 / 248**	**3.22**	**1. Attitude markers 2. Mitigators 3. Self-mentions**
Acknowledging external and self-praise (73)	**255**	**13 / 242**	**3.49**	**1. Attitude markers 2. Self-mentions 3. Intensifiers**
Claiming a project milestone (37)	110	5 / 105	2.97	1. Self-mentions 2. Engagement markers (Exclamations) 3. Attitude markers
Hyping expected data and accomplishments (21)	**81**	**1 / 80**	**3.85**	**1. Attitude markers 2. Self-mentions 3. Intensifiers**

Below, we present some examples that illustrate the use of self-mentions and attitude markers in the three promotional pragmatic strategies where highest use was made of metadiscourse. First, an average of 3.85 metadiscourse tokens per strategy was found in "hyping expected data and accomplishments." In figure 9, when highlighting research groups' achievements, use is made of the possessive adjective *our* a self-mention to the

team, as well as attitude markers such as *thrilling* and *effectively*, denoting affective values and positive evaluation of the team's outcomes.

FIGURE 9. Use of Interactional Metadiscourse Markers in the "hyping expected data and accomplishments" Promotional Pragmatic Strategy (Tw4-64)

Research projects similarly resort to self-mentions and attitude markers when acknowledging praise for their research activities. In figure 10, reference is made to the project and positive attitudinal markers are displayed—*intense*, *stronger* and *more famous*, accompanied by emojis—in order to project a 'collective e-visibility' (Lorés-Sanz and Herrando-Rodrigo 2020), while they also contribute to networking in that they retweet and respond to a previous, single-authored tweet. This demonstrates the shareability function in social media platforms (Petroni 2019), which can be exploited for scholarly dissemination purposes. This promotional pragmatic strategy is in fact doubly represented in this example, first in the external praise from an individual user—*Congratulations*—and then in the quoted tweet, which frames and echoes the praise while it also adds a clearly positive self-representation of the project (self-praising).

FIGURE 10. Use of Interactional Metadiscourse Markers in the "acknowledging external and self-praise" Promotional Pragmatic Strategy (Tw6-75)

Metadiscourse markers also abound in the promotional pragmatic strategy "emphasising the quality and novelty of outreach", with an average of 3.22 markers per strategy. It is through self-mentions and attitude markers, toned down by mitigators, that the project outcomes and their implications for society are positively projected.

4.3. Metadiscourse Markers in Interactional Pragmatic Strategies

In the interactional macro-category of pragmatic strategies, engagement markers prevail over other interactional metadiscourse categories (table 6). Within these engagement markers, the most common ones are directives, employed to prompt the audience to take a course of action. They are followed by reader pronouns—*you*, *your* or inclusive *we*, *our* and *us*, as well as direct references through @ mentions—, questions and exclamations.

TABLE 6. Tokens and Ratio of Pragmatic Strategies within the Interactional Macro-category and their Metadiscourse Realisation

Interactional pragmatic strategies	Metadiscursive markers			Characteristic metadiscourse categories
	Total	Interactive/ Interactional	Average per strategy	
Making information visually salient (553)	608	384 / 224	1.09	1. Logical markers (Reformulators) 2. Self-mentions 3. Endophoric markers
Fostering networks (491)	359	35 / 234	0.73	1. Engagement markers (Directives) 2. Engagement markers (Exclamations) 3. Engagement markers (Reader mentions)
Guiding the audience to perform an action (469)	**932**	**109 / 823**	**1.98**	**1. Engagement markers (Directives)** **2. Engagement markers (Reader mentions)** **3. Self-mentions**

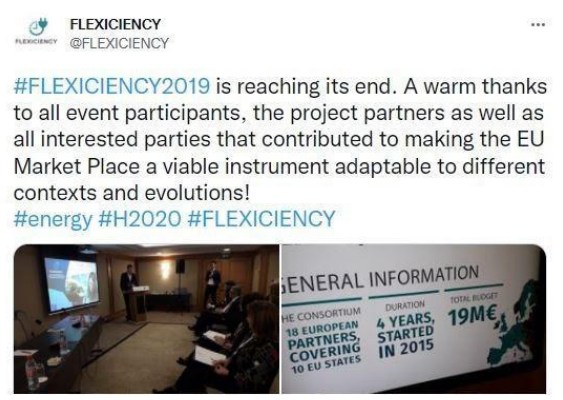
Interactional pragmatic strategies	Metadiscursive markers			Characteristic metadiscourse categories
	Total	Interactive/ Interactional	Average per strategy	
Inviting the audience to consume research project output (410)	763	90 / 673	1.86	1. Engagement markers (Directives) 2. Self-mentions 3. Attitude markers
Hooking the audience (200)	383	22 / 361	1.91	1. Engagement markers (Questions) 2. Engagement markers (Reader mentions) 3. Self-mentions
Engaging the audience to participate in the project (154)	**508**	**45 / 463**	**3.29**	**1. Engagement markers (Directives)** **2. Self-mentions** **3. Attitude markers**
Praising and thanking others (98)	**238**	**5 / 233**	**2.42**	**1. Attitude markers** **2. Engagement markers (Exclamations)** **3. Self-mentions**
Offering contacts for information (3)	2	1 / 1	0.66	1. Endophoric markers 2. Engagement markers (Directives)

Interactional metadiscourse categories are commonly resorted to when "engaging the audience to participate in the project." Figure 11 illustrates the use of directives—*visit* and *find out*—accompanied by a visual, which may also make readers keener to turn up at the booth of the research group and learn about their project.

FIGURE 11. Use of Interactional Metadiscourse Markers in the "engaging the audience to participate in the project" Interactional Pragmatic Strategy (Tw7-16)

Attitude markers feature very frequently in "praising and thanking others" in combination with exclamations and, to a lesser extent, self-mentions. This pattern of interactional markers used to realise the pragmatic strategy is clearly demonstrated in figure 12, where abundant use of positive evaluative markers is made—*warm*, *viable*, *adaptable*—and the research group refer to themselves, all of which is enhanced by means of an exclamation at the end of the tweet.

FIGURE 12. Use of Interactional Metadiscourse Markers in the "praising and thanking others" Interactional Pragmatic Strategy (Tw8-4)



Finally, figure 13 shows the combination of engagement markers, both directives (*read about*, *learn more*) and reader mentions—*you*—when "guiding the audience to perform an action." This is targeted to networking with specific Twitter users—other international H2020 research projects in this case. The interplay of self-mentions (@DISIRE_2020) and questions serves to encourage different stakeholders to get involved and consume further information on the project rationale and outcomes.

FIGURE 13. Use of Interactional Metadiscourse Markers in the "guiding the audience to perform an action" Interactional Pragmatic Strategy (Tw1-30,31,32)

On the whole, the quantitative and qualitative analysis has demonstrated that metadiscourse plays a key role in the realisation of the pragmatic strategies identified in the corpus of tweets by H2020 research projects for dissemination purposes. Interactional verbal and non-verbal metadiscourse markers were found to be abundant in the tweets analysed, especially in promotional and interactional strategies. Whereas self-mentions and attitude markers outnumber other metadiscourse categories in all promotional strategies (table 5 shows that these are two of the three most frequent categories used), it is engagement markers, especially directives and reader mentions, that stand out in the realisation of many of the interactional pragmatic strategies (see table 6).

5. Final Remarks

This paper has investigated the use of metadiscourse markers on a social networking site which is the one preferred by international projects to communicate and widely disseminate their research aims, actions and results. These research groups maintain

and feed their Twitter accounts making use of an array of pragmatic strategies that respond to three overarching communicative intentions—informative, promotional and interactional (Pascual 2023). These pragmatic strategies are employed to build the group's collective identity, increase their visibility, share the results of their research and (potentially) interact with multiple audiences. We have sought to study the metadiscoursal realisation of a data-driven taxonomy of twenty-seven identified pragmatic strategies in order to understand the role metadiscourse may play in this context of digital communication.

Our study has called for adaptations, entailing adjustments and additions, to the framework of metadiscourse as applied to the analysis of analogue academic texts (Hyland 2005; Mur-Dueñas 2011). New functions and markers emerged from our analysis and were deemed necessary to appropriately reveal the specific usage of metadiscourse made by scholars on Twitter in particular, as well as their evolving digital practices in general. The visual and hypertextual nature of the social medium analysed has driven us to broaden how metadiscourse is realised, including non-verbally, especially in certain categories.

In answering our first research question, we have made some adjustments to the traditional taxonomies of metadiscourse to apply these analytical frameworks to the exploration of digital academic discourse. Our adaptations are based on three phenomena:

1. *Expansion*. The category of evidentials needs to be regarded in a different light from the traditional use made in offline, paper-based texts and genres. The particular affordances of Twitter allow for a wider scope of evidentials and for various mechanisms to refer to others' speech and acknowledge a source of information. Apart from quoting what others have claimed in the conventional sense, it is typical of Twitter to explicitly mention the author of the quotation by inserting their username preceded by @, to retweet as a form of citing others and endorsing their messages, and even to publish quoted tweets, where others' original tweets are commented on in the author's feed.
2. *Reinterpretation*. The pervasiveness of visual elements in Twitter is also key in the digital practices deployed by international research groups when posting about their projects. Especially via typographic resources and the exploitation of emojis, these visual elements have been analysed and found to be important in specific writer-reader relationships. Our reinterpretation, contingent to social media environments, and specifically Twitter, hints at the emergence of a) visual reformulators based on icons and emojis used to reduplicate the information in the message; b) topicalisers, instantiated by non-personal emojis, that introduce new specific themes; c) typographic and visual arrows used as endophoric markers and sequencers within and across tweets and driven by the required brevity of tweets; d) @ as an indicator of straightforward reader mentions, which are actually notified to the corresponding Twitter user; and e) attitude markers

being epitomised by emojis mostly representing people and emotions, which may also be taken as a feature of informalisation.

3. *Addition*. Exclamations have been included as a prevailing metadiscourse feature in the set of engagement markers. They reinforce the interaction in which Twitter users engage, establishing rapport with audience members and leading them to focus attention on specific information.

In response to our second and third research questions, our findings have revealed the clear predominance of interactional metadiscursive features over interactive ones in each of the three macro-categories of pragmatic strategies in the EUROPROtweets Corpus. However, such interactional metadiscourse markers have been found to be far more salient in the promotional and interactional pragmatic strategies. In the case of promotional strategies, a purposeful use of self-mentions and attitude markers has been found in relation to the specific strategies for which the use of metadiscourse markers was highest, namely "hyping expected data and accomplishments," "acknowledging external and self-praise" and "emphasising the quality and novelty of outreach." In the case of interactional pragmatic strategies, it is the use of engagement markers—directives and reader mentions, in particular—together with self-mentions that tend to predominate, especially in the pragmatic strategies "engaging the audience to participate in the project," "praising and thanking others" and "guiding the audience to perform an action," which present a disproportionally higher number of metadiscourse markers per strategy.

The analysis was based on a small, albeit representative, sample of texts and we, therefore, need to be cautious in the conclusions drawn regarding the overall and specific use of metadiscourse markers and categories in TRDP. The study may need to be replicated in a broader sample of social media texts in order to corroborate these preliminary findings. We also believe that the adjustments made to the taxonomy and the findings obtained regarding the use of metadiscourse in digital discourse should be further confirmed by applying the same analysis to Twitter discourse of a different nature—e.g., in individual accounts—as well as other social media contexts that research projects may employ—e.g., Facebook, LinkedIn—and to other digital texts, for instance, research project websites, which, as has been claimed, constitute 'host' digital practices (Yang 2016). These all open possible, fruitful venues for further research. In addition, it could also be enlightening to undertake reception analyses in order to look at a possible correlation between the use of metadiscourse markers and the altmetrics registered in research group Twitter accounts.

Nevertheless, the results of our analysis of the metadiscoursal realisations of pragmatic strategies in a particular Social Medium for Research Dissemination Purposes may help better understand researchers' increasingly complex digital discursive practices employed to communicate and transmit their results, to make themselves visible, to account for their work and funding and to engage diversified audiences. Our study

is also a contribution to meeting the need for and pertinence of small-scale, context-sensitive pieces of research into the scholarly use of social networks (Veletsianos 2016). In addition, we propose in this paper certain necessary revisitations of the framework of metadiscourse—originally put forward to analyse metadiscourse in analogue written academic texts—in order to adapt it to users' evolving digital practices and to situated communicative events, which entails considering further features and semiotic modes. With this work, we have sought to shed light on the pragmatic and, in particular, metadiscursive mechanisms that are relevant, both verbally and non-verbally, to enacting and conveying the communicative intentions of international research groups in their Twitter accounts.[5]

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