HYBRID NETWORK METHODS TO DISENTANGLE DATAFICATION IN THE DOMESTIC CONTEXT

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Introduction

Datafication of childhood and family life (Barassi, 2020; Mascheroni & Siibak, 2021) represents one of the main expressions of data colonialism (Couldry & Mejias, 2019). The normalisation of data relations on which data colonialism is premised - that is, the emergence of new types of social relations that are enabled by the technologies of data extraction while contributing to their legitimation (Couldry & Mejias, 2019) - poses significant epistemological and methodological challenges. Drawing on a longitudinal mixed-methods research project with 20 families with young children (0-8 y.o), this contribution sets out to advance some methodological proposals to study such phenomena through hybrid methods.

Theoretical framework

The colonisation of everyday life through technologies and practices of data extraction would not be possible without a simultaneous colonisation of social imaginaries, which normalise data relations as natural, inevitable and even desirable (Couldry & Mejias, 2019). Data relations are pervading the practices and imaginaries of parenting and childhood to the point of being taken for granted.
This pervasiveness, yet ambivalence, of data in family life, then, poses an "epistemological puzzle" (Milan & Treré, 2019) that includes a methodological component. Addressing the heterogeneity and irreducibly contradictory character of the social world (Couldry & Mejias, 2019), some methods have been accredited as more suitable to disentangle the situated nature of data practices, while fostering

empowerment of research subjects (see Costanza-Chock 2018, D'Ignazio & Klein, 2019).

In our study of datafication of childhood and family life, we declined this into a "non-media-centric" approach (Couldry, 2012)- which recognises data relations as embedded in situated social practices (Kennedy et al., 2015) and foregrounds the power relations at play.

Moreover, we argue that the entanglement of data with imaginaries and practices can be best framed if we understand families as *communicative figurations* (Couldry & Hepp, 2017; Hepp et al., 2018) composed of a constellation of *actors* (family members), *culture* (including technological and surveillance imaginaries (Lyon, 2018), *communication practices*, and a specific digital *media ensemble*.


Methodological proposal

Accordingly, the study adopts constructivist grounded theory (Charmaz, 2014) and integrates interviews, observational and visual data (Pink & Leder-Mackley, 2012) and network analysis within a qualitative longitudinal research (QLR) with families with young children (0-8 y.o) (N=20), comprising three waves of data collection.
We suggest that network methods and CGT appear suited as analytical tools to capture the interactions between data (generated by the media practices of each household's member) and each family figuration. These techniques allow to map each family's constellation of actors, their data practices and imaginaries, and the digital media ensemble accounting for household's power relations and the family's social norms. Moreover, these visualisations can be employed as "reflexive maps" to foster participants' reflexivity and co-participation.

Findings

Although still in an initial stage of development, the employment of networks methods seems to be an effective way to map the intersection between data relations and family figuration, as shown by the following maps realised triangulating data from the interviews of the first wave of the QLR within a family with two female children of 8 and 10 y.o.
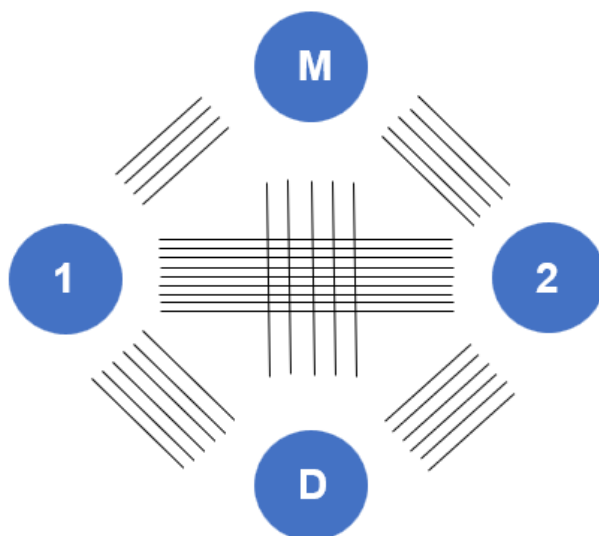
Fig.1
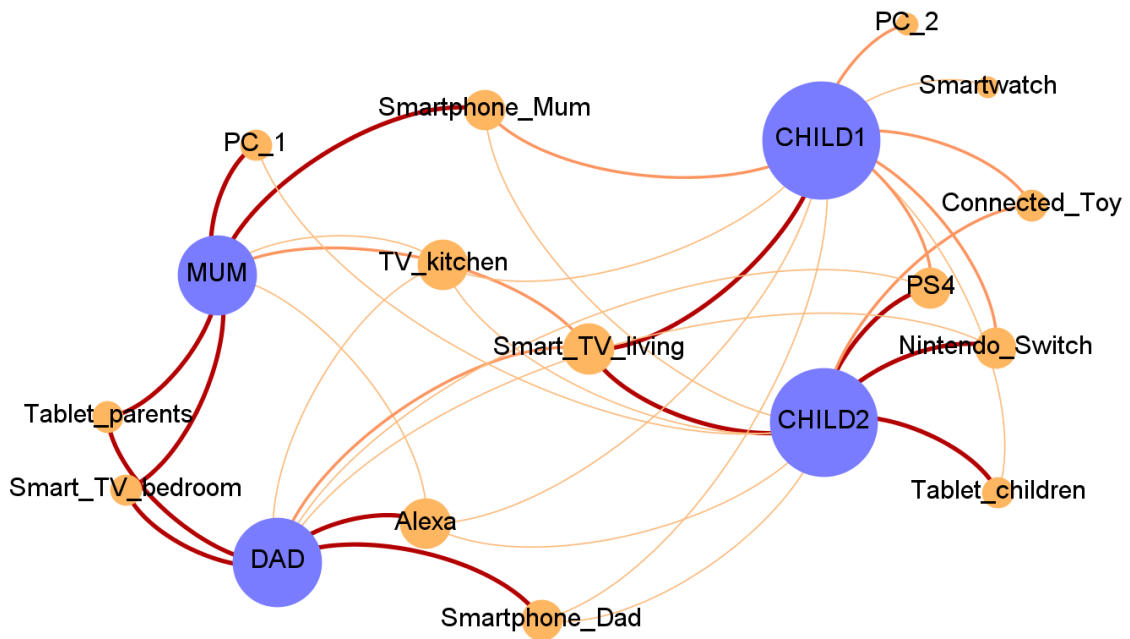
Two-mode network of media ensemble and family members (constellation of actors). The thickness of the edges is proportional to the intensity of communicative practices that employ the medium (low-medium-high). The size of the nodes is proportional to their degree (number of actor-device connections).

Two-mode networks allow to identify the most relevant devices and visualise patterns of spatial differentiation. For example, the east of the graph represents the space for children, where they can experience digital media with reduced external interference; while the west describes the private space reserved only to parents. In the center, we observe the common spaces (living room/kitchen) with shared media (TVs, Alexa…). It's worth noticing that the strongest edges are those connecting individuals, both adults and children, to 'owned' and 'personal' media that represent both identity resources and means to confirm status and agency within the household.

Fig.2

M= Mum; D= Dad; 1= Child 1 (10 y.o); 2= Child 2 (8 y.o)

Simple projection of the two-mode network (fig.1). Every node is a family member and each link represents a device adopted by both actors.

Fig.3

	Mum	Dad	Child1	Child2
Mum	7	5	4	5
Dad	5	8	6	6
Child1	4	6	11	9
Child2	5	6	9	10

Matrix of the one-mode network of actors. Each cell reports the number of devices used in common, while the a_{ii} one shows the actor's degree, i.e the number of adopted media.

The projection of the previous network – i.e the conversion of a two-mode in a one-mode network - shows the pattern of distribution of the *media ensemble* and the media-related structure of relationships among family members. We observe (fig. 2) that the father has a more symmetric formation, sharing the same number of media with the children. Likewise, the two kids use many devices in common, although child 1 seems to be a little bit more mediatized (degree=11), even if she has less intense *communicative practices* (see fig.1), while child 2 shares the highest number of devices with relatives. It's interesting to notice that the mother uses less devices and shares fewer of them with children compared to her partner: this may suggest a specific attitude towards technology or an under-investment due to the need to keep up with childcare as the husband comes home late in the evening.

These visualisations are useful to glimpse some coordinates of the family's *culture* worth to be deepened in the next waves of research. Moreover, they can be adopted as a stimulus to participants to foster reflexivity on data relations in the digital-material context of their daily life.

Conclusion

Studying datafication of childhood and family life poses relevant methodological and epistemological challenges that require a critical approach to data. This paper has suggested how the adoption of a CGT methodology employing hybrid methods, which leverages the potential of network methods, may represent a way to materialize data relations and foster reflexivity to disentangle data colonialism in family life.

References

Barassi, V. (2020). *Child | Data | Citizen. How tech-companies are profiling us from before birth*. The MIT Press.

Charmaz, K. (2014). *Constructing grounded theory: A practical guide through qualitative analysis*. Second Edition. Los Angeles: Sage.

Costanza-Chock, S. (2018). Design justice, A.I., and escape from the matrix of domination. *Journal of Design and Science*, *3 (5).* Retrieved from https://jods.mitpress.mit.edu/pub/costanza-chock

Couldry, N. (2012). Media, society, world: Social theory and digital media practice. Polity.

Couldry, N., & Hepp, A. (2017). *The mediated construction of reality*. Polity.

Couldry, N., & Mejias, U. A. (2019). *The costs of connection*. Stanford University Press.

D'Ignazio, Catherine, and Lauren Klein. 2019. *Data Feminism*. Cambridge, MA: MIT Press.

Hepp, A., Breiter, A., & Hasebrink, U. (2018). *Communicative figurations: transforming communications in times of deep mediatization*. Cham, Switzerland: Palgrave.

Kennedy, H., Poell, T., & van Dijck, J. (2015). Data and agency. *Big Data & Society, 2(2),* 1-7.

Lyon, D. (2018). *The Culture of Surveillance: Watching as a Way of Life*. Cambridge: Polity.

Mascheroni, G. & Siibak A. (2021). *Datafied Childhoods. Data Practices and Imaginaries in Children's Lives*. Peter Lang AG.

Milan, S., & Treré. E. (2019). Big Data from the South(s): Beyond Data Universalism. *Television & New Media, 20 (4)*, 319–35.

Pink, S. & Leder-Mackley K. (2012). Video and a sense of the invisible: approaching domestic energy consumption through the sensory home. *Sociological Research Online, 17(1)*, 3.