Algorithmic information co-regulation in the digital markets

Abstract

One of the main technological advancements stemming from the digital revolution is the ever increasing ability of online platforms to adopt algorithmic decisions, i.e. highly granular and profiled decisions based on self-learning machines, that can predict choices and thus anticipate human will.

The paper is a theoretical one and addresses the question of whether disclosure self-regulation, as is currently conceived of at the EU level, is the most appropriate strategy to tackle the multifaceted risks of algorithmic decisions taken by private agents. It suggests that: (1) also disclosures should be based on algorithms; (2) pre-tested in a co-regulatory process that involves the regulator and stakeholders; and (3) enforced through legal and other empowerment tools, rather than sole fines.

At the EU level, the General data protection regulation, or GDPR, requires platforms to lay down codes of conduct for the provision of information about the automatic treatment of personal data and to self-assess the risks of data breaches (privacy by design). However, no reference is made to the different capabilities of recipients to such information to understand and process the meaning of algorithmic decisions and their consequences.

Similarly, in relation to the "increasingly dependent" myriads of small and micro businesses (SMEs), the prospected Regulation on the promotion of "fairness and transparency for business users of online intermediation services" (COM(2018) 238 fin. of 26.4.2018) also requires platforms to disclose in their codes of conduct eg. the "main ranking parameters", or to describe access to data generated by the use of the platforms. Here again, disclosures have in mind a relatively typological notional idea of SMEs and, moreover, do not foresee any enforcement tools.

The paper contends that disclosure self-regulation in a digital era should be rethought of.

First, since final consumers and SMEs are unaware of the mechanisms underpinning the working of digital markets, such as the value of personal data, the gap that regulators should fill is substantial. Second, by employing automatic algorithms running over big data, platforms have acquired the capability to manipulate the information that they produce (such as rankings, ratings, etc.) and distribute for consumers and SMEs, with the ultimate effect of weakening the validity of their choices.

The paper recommends endorsing an enforced co-regulatory approach to algorithmic decisions.

First, regulators should diversify their intervention to tackle low bargaining power, bad information, and information asymmetries plaguing consumers and SMEs alike, following the guiding principle of proportionality (see Tab. 1 below). To do so, they are advised to pre-test algorithms to design disclosures in a co-regulatory process, that is participated by the industry (both the platforms and SMEs) and consumers. Acting much like regulatory "sandboxes" in the financial markets (that test rules thanks to simulation run over big data), small experimental pre-trial groups should be set up to help identify really meaningful information, implement rapid amendments to algorithmic disclosures and reduce their major risks (ie, biases in rankings, overreliance in correlation, discrimination, etc.).

Second, such co-regulated algorithmic disclosures would be targeted to the different informational needs of the recipients: for instance, over-simplified information would be drafted for "naïve" consumers and micro-enterprises; while full disclosures would be adopted for smart ones. In this regard, "personalized" disclosures should also be considered as a means to really empower consumers and SMEs in a digital environment (see Tab. 2 below).

Third, enforcement powers of the regulator vis à vis the codes of conducts should be diversified, although to the extent that does not stifle innovation (currently the GDPR sets high fines, while the transparency draft Regulation does not foresees any enforcement tool). Thanks to the

involvement of the regulator in the co-regulatory process, one proposal could be that all modifications to algorithmic disclosures (that are accepted after the pre-testing phase) are given a special legal effect (eg., could be directly implementable by the parties in their codes of conduct, subject to sanction by the regulator). Alternatively, or in addition, regulators could engage in campaigns of "cognitive empowerment" (again, see Tab. 1) to target information at recipients, eg. by using education.

Selected references:

Alemanno A and A Spina, 'Nudging Legally. On the Checks and Balances of Behavioural Regulation', (2014) 12 Int.l J. of Const.l L., 2, 429-56

Ayres I and A Schwartz, *The No-Reading Problem in Consumer Contract Law*, (2014) 66 Stanford L. Rev., 545-609;

Bakos Y, F Marotta-Wurgler and David R Trossen, 'Does Anyone Read the Fine Print? Testing a Law and Economics Approach to Standard Form Contracts', (2014) 43 J. of Legal Studies, 1-35

Ben-Shahar O and Carl E Schneider, *More Than You Wanted to Know: The Failure of Mandated Disclosure* (Princeton, Princeton University Press 2014)

Ben-Shahar O, 'The Myth of the "Opportunity to Read" in Contract Law', (2009) Europ. Rev. of Contract L., 1-28

Busch C and A. De Franceschi, *Granular Legal Norms:* Big Data *and the Personalization of Private Law*, in V. Mak, E. Tjong Tjin Tai, A. Berlee (eds), *Research Handbook on Data Science and Law*, Edward Elgar, 2018, https://ssrn.com/abstract=3181914

Busch C, 'Implementing Personalized Law: Personalized Disclosures in Consumer Law and Privacy Law', (2018) Univ. Chicago L. Rev., forthcoming, https://ssrn.com/abstract=3181913

Cohen JE, 'The Regulatory State in the Information Age', (2016) 17 Theoretical Inquiries L. 369-414

Di Porto F, *La regolazione degli obblighi informativi. Le sfide delle scienze cognitive e dei big data*, Napoli, Editoriale scientifica, 2017

Di Porto F and N Rangone, 'Behavioural Sciences in Practice: Lessons for EU Rulemakers', in A.-L. Sibony and A. Alemanno (eds) 'Nudge and the Law. A European Perspective', (Oxford, Hart Publ. 2015), 29-59

Di Porto F, 'In Praise of an Empowerment Disclosure Regulatory Approach to Algorithms', (2018), 49 IIC - International Review of Intellectual Property and Competition Law, 5, 507 ff., https://link.springer.com/article/10.1007/s40319-018-0708-0

Dow Schull N, *Addiction by Design*, (New Jersey, Princeton University Press 2012)

Gillis TB, 'Putting Disclosure to the Test: Toward Better Evidence-Based Policy', (2015) 28 Loyola Cons. L. Rev., 33-105

Grüne-Yanoff T and R Hertwig, 'Nudge versus Boost: How Coherent are Policy and Theory?', (2016) 26, *Minds and Machines*, n. 1-2, 149

Leta Ambrose M, 'Lessons from the Avalanche of Numbers: Big Data in Historical Perspective', (2015) 11 Journ. L. Pol. for Inf. Soc., p. 201-277

Marotta-Wrugler F, 'Even More Than You Wanted to Know About the Failures of Disclosure', (2014) NYU L. and Econ. Working Papers, Paper n. 394, http://lsr.nellco.org/nyu_lewp/394

Marotta-Wurgler F, *Does Contract Disclosure Matter?* in (2012) 168 J. of Inst.l and Theor. Econ., 94-119;

Newman N., 'The Costs Of Lost Privacy: Consumer Harm And Rising Economic Inequality In The Age Of Google' (2014) 40 William Mitchell Law Review 849-

Porat A and L Strahilevitz, 'Personalizing Default Rules and Disclosure with Big Data', in (2014) 112 *Michigan L. Rev*., 1417-78

Stiglitz JE., 'On the Microeconomics of Technical Progress', in J.M. Katz (ed.), *Technology Generation In Latin American Manufacturing Industries* (1987) 56

Sunstein CR, *The Ethics of Influence: Government in the Age of Behavioral Science*, (Cambridge University Press 2016)

Sunstein CR, *Why Nudge*, *The Politics of Libertarian Paternalism,* (New Haven, Yale University Press 2014)

Tapscott D. and A.D. Williams, *Wikinomics. How Mass Collaboration Changes Everything* (Portfolio, New York, 2008)

Thaler RH and W Tucker, 'Smarter Information, Smarter Consumers', (2013) 3 Harv. Bus. Rev., Jan.-Feb., 3

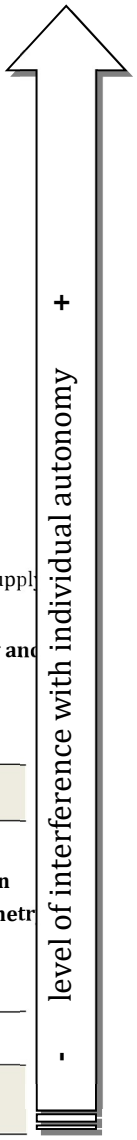
Van Loo R, 'Technology Regulation by Default: Platforms, Privacy, and the CFPB', (2018) 2 Geo. L. Tech. Rev. 531, 538.

Yeung K, 'Hypernudge: Big Data as a Mode of Regulation by Design', (2016) 20 J. Inf. Comm. & Soc., 1, 118-36

Zamir E and D Teichman (eds) The Oxford Handbook of Behavioral Economics and The Law (2014)

Tab. 1 - Ladder of disclosure intervention (based on proportionality)

DISCLOSURE REGULATORY TOOL	CHARACTERS IN RELATION TO AUTONOMY	CONS
DISCLOSURE BY NUDGING		
▪ **Relational information or** feedback (ex: 'tell what peers are doing'); ▪ **Exploiting emotional responses** (e.g. shocking images)	**Exploits bias** (bias preserving) **Affects autonomy & preferences: ('end paternalism')** **Libertarian paternalism** (low coercion but limits autonomy) **Low-cost of design**	**Risk of State manipulation** **Lack of transparency** Potentially successful in changing behaviors where other tools fail **BUT** **Long run incapacitation**
DISCLOSURE BY COGNITIVE EMPOWERMENT		
▪ **Simplification of information** (by using framing and salience) ▪ **Smart disclosure** (e.g. data portability, vaults); ▪ **Simplification of choice tools** (e.g. price comparison apps); ▪ **Targeted education** ▪ **Overcoming emotional responses** (e.g. cooling-off rules)	**Helps to overcome** biases and emotional responses **(truly de-biasing);** Emphasis on **self-education** **Preserves autonomy & preferences ('means paternalism')** Low-cost of design	Cons: **Aversion to being empowered** Pros: May **strengthen demand** *vis à vis* suppl May **promote competition** **Can increase compliance with law and participation in public programs**
TRADITIONAL DISCLOSURE REGULATION		
▪ *Ex ante* disclosure duties; (e.g. pre-contractual information); ▪ *Ex post* prohibitions of false information; misleading advertising, ▪ Unfair commercial practices	**Neutral** towards individual preferences & cognitive context (rules apply to everyone disrespectful of incidence of biases) **Preserves autonomy**	**Detailed** impersonal general rules Not ensure effective **comprehension** Can exacerbate **information asymmetr** Information **overload** **Accumulation** problem



Tab. 2	Typology of disclosures	Characters
(A)	**(traditional) detailed disclosures** (not differentiated)	To be maintained as an irrepressible societal knowledge base (eg., drug disclosures)
(B)	**(traditional) simplified and standardized disclosures**	Standardized and simplified information (Note that if standardization and simplification are operated through cognitive techniques, ie formats are tested in advance so to avoid unintended effects - such as *anchoring* or *familiarity biases* in financial markets - then they become *cognitive empowerment* tools: **C.1**)
(C)	**Cumulation of three types**	
	Differentiated disclosure model (expression of proportionality: based on the 'differentiated regulation' model)	If the target population is in part affected by one or more biases (to be established in the course of the regulatory process through cognitive experiments, eventually integrated through *big data analytics* techniques).
	(A) ***detailed disclosures*** for smart individuals	(*see supra*)
	PLUS	
	(C.1) *cognitive-based differentiated disclosures* - ***cognitive empowerment (CEt)***	disclosures tackle the most diffused bias among the target population *preferably through* ***CEt*** tools (eg., info over-simplification or education). CEt boosts individual's decisional autonomy in an aim to foster slow thinking (truly de-biasing techniques).
	If (and only if) testing shows C.1 techniques are comparatively much less effective, regulators could employ	
	(C.2) *cognitive-based differentiated disclosures* – ***nudge***	disclosures based on nudging techniques exploit biases and emotional responses, thus preserving them ex. relational information or feedback information (provided that "opting-out" is made very easy) or disclosures leveraging on social norms.
	NB: Of both experimentations and the use of cognitive-based disclosures regulators must provide for wide reasons in the regulatory decision	
	PLUS	
	(C.3) ***personalized disclosures*** through *big data analytics* **(a)** "à la Busch" granular, at the individual level – require consent for data treatment **(b)** "à la Di Porto" less granular, at the group level – do not require consent	**(b)** use of algorithms to design personalized disclosures in a (voluntary) co-regulatory scheme (ie., algorithms are pre-tested in cooperation with the regulator, firms and consumers to avoid biases before personalized disclosure are implemented on a wide scale). Consumers may always opt for *detailed disclosures* (A).