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ABSTRACT
Drawing on actor-network theory (ANT), this essay explores the politics of punctualization and depunctualization by closely examining the Digital Advertising Alliance (DAA), an online advertising and marketing trade consortium. I deploy two concepts from actor-network theory, punctualization and depunctualization, as key lenses through which to see the shifting contours of the Digital Advertising Association as it confronts other actor-networks.

Drawing on actor-network theory (ANT), this essay explores the politics of punctualization and depunctualization by closely examining the Digital Advertising Alliance (DAA), an online advertising and marketing trade consortium comprised of seven organizations: the Better Business Bureau (BBB), the Direct Marketing Association (DMA), the Network Advertising Initiative (NAI), the 4As (an advertising agency trade group), the Association of National Advertisers (ANA), the American Advertising Federation (AAF), and the Interactive Advertising Bureau (IAB). Together under the aegis of the DAA, these organizations and their members represent a massive percentage of the global advertising and marketing industry, an industry based on sophisticated tracking technologies, practices of profiling consumers, and increasingly precise customization of ads, sales pitches, pricing schemes, and product offerings (Turow, 2011).

I will argue that the DAA is an association (Latour, 2005) of these seven organizations and their heterogeneous online advertising practices, dedicated to a strategy of extending and maintaining the power of advertising in the political economy of the Internet. In support of that argument, and in line with ANT scholarship, I will trace some of the associating work the DAA does in order to cohere and maintain itself as a unified organization. However, I will also argue that the DAA often deploys multiplicity and heterogeneity in service to its overall associating practices. In other words, simply tracing association, simplification, and coherence will not be enough

to explain the DAA's success; I will have to consider the DAA's use of complexity and seeming incoherence as tactics in support of its overall cohering strategy.

To do this work, I will deploy two concepts from actor-network theory, *punctualization* and *depunctualization*, as key lenses through which to see the shifting contours of the Digital Advertising Association as it confronts other actor-networks. I will illustrate this with three specific moments of simplification and heterogeneity associated with the DAA: The use of spokespeople, a cookie-based opt-out system, and a small triangular logo. To explore these three moments, I will closely read press releases, legislative testimony, and the architectural and technical structures of the DAA and DAA-member websites, as well as draw on the scholarly literature on online advertising, human-computer interaction, and standards consortia. My ultimate argument is that ANT scholarship must consider how organization is just as much about deploying heterogeneity as it is about cohering into durable singularity.

Punctualization and depunctualization

One way to think about the success of any actor-network (say, a technological artifact, an organization, or a social concept) is to consider to the degree to which it does not appear to be a network, but rather a coherent, independent entity. A refrigerator, for example, appears to be a solitary appliance in a kitchen. In the vast majority of our interactions with a fridge, we do not think of all the networks it stands in for: Food distribution, electricity, raw materials, calorimetry, compressors, gaskets, screws, hinges, light bulbs, marketing campaigns, conceptions of health and nutrition, blueprints of homes, or spatial arrangements, to name a few. We simply open it to get the milk and forget the details. The refrigerator here is *punctualized*.

Michel Callon was the first actor-network theorist to explicate punctualization, arguing that "the process of punctualization … converts an entire network into a single point or node in another network' (Callon, 1991, p. 153). For Callon, punctualization emerges as networks are made more durable, irreversible, and simplified. A punctualization draws on and enrolls

> a mass of silent others from which it draws its strength and credibility… . Thus a network is durable not only because of the durability of the bonds between the points (whether these bonds concern interests or electrolytic forces) but also because each of its points constitutes a durable and simplified network (Callon, 1987, p. 96).

This is a process by which network complexities are elided in favor of a simplified, unified artifact to be comprehended in terms of inputs and outputs (very often referred to as a "black box" in ANT scholarship).

Punctualization is the successful construction of an artifact, organization, or idea—that is, the successful association of heterogeneous bits and pieces into a coherent thing that remains, by and large, durable over time and space and easy to understand and interface with.

Building upon and complicating this idea, John Law articulates punctualization with *heterogeneity* and *oscillation*. For Law, punctualization is always linked to a reciprocal and incompatible mate, heterogeneity. To be sure, punctualization is simplification (as in the Callon sense above): As Law argues, "when we tell ordering stories we simplify and 'punctualize'" (Law, 1994, p. 132). This is because

> … not everything can crowd into a single place, and implosion, or, perhaps better, condensation, is impracticable. Perhaps this is a general principle, but, linked to concern with design and control, it's what the actor-network theorists point to when they tell of "punctualization." That which is complicated comes in simple packages … that can be used to make sense (Law, 2002b, p. 120).

However, Law complicates simplification with *heterogeneity/simplicity* as a coupled concept:

> I will say that heterogeneity is an oscillation between absence and presence. It is about the way in which whatever is not there is also there but also how that which is there is also not there. Heterogeneity, then, is about the differences that reside in connection and disconnection, or, more precisely, it is about the ambivalent distributions entailed in dis/connection. Which means that simplicity not only creates absence, but is also depends on presence. Hence the term *heterogeneity/ simplicity* (Law, 2002b, p. 122).

For Law, then, punctualization is always tied to making absent, or what he calls *deletion*, and making present, or *ordering* (Law, 1994, p. 132). Simplicity is always complicated in that presence and absence overdetermine one another. Law's particular take on punctualization as oscillation between presence and absence, simplicity and complexity is echoed in the work of Annmarie Mol (2002), Anni Dugdale (1999), as well as in Latour's discussion of blackboxing in *Pandora's Hope* (Latour, 1999, pp. 183–185).

With this in mind, much ANT scholarship could be described as the work of *depunctualization*, that is, showing that what appears to be simple or reified is in fact messy and contingent, revealing what is absent when a simplified punctualization is present. Basically, much ANT scholarship asks us to consider the black boxes around us and then think through all the networks that make them possible. Perhaps this work seizes upon moments when a neat actor-network has a breakdown and its internal elements are exposed to view (e.g., Kopylec, D'Amico, & Goodall, 2008; Nexon & Pouliot, 2013). As Latour notes in *Pandora's Hope*, crisis often begets depunctualization (Latour, 1999, p. 184). Or, the scholar could be the force of depunctualization, doing the work of mapping a network's inner heterogeneity and

exposing it to view (e.g., Hertz & Parikka, 2012; Van den Hoven, 2011). The basic move here is to show that things could be otherwise, and in some scholarship, the revelation of contingency and complexity is followed by proposed political or sociotechnical programs to improve a given situation (e.g., Goodman, 1999).

I suggest that a normative corollary to this is implied: the work of organizations, ideas, technologies, and institutions is to *avoid* depunctualization. Callon's use of "punctualization" links it to ideas such as "durability," "strength,"' "credibility," "irreversibility," and "stability" (Callon, 1991), all apparently valuable attributes of a successful actor-network. Latour's seven steps of blackboxing holds "punctualization" as the pinnacle of the association process (Latour, 1999, p. 184). Thus, for much ANT-based scholarship, especially organizational ANT scholarship (e.g., Cooren, 2001; Czarniawska & Hernes, 2005a; Fairhurst & Cooren, 2009), the tendency is to treat punctualization as a goal—a coherent, stable association that appears unified is something to strive for (e.g, Warzynski & Krupenikava, 2010). Perhaps the scholar in question is critical of the punctualization under study; in that case, the scholar seeks to depunctualize it, but in that case of course the punctualization is presented as something that resists such deconstruction. In other places, "depunctualized" is used as a fancy way of saying "broken"—the refrigerator's compressor is burned out and so a group of repair technicians gathers around the device, revealing part of its heterogeneity (Latour, 1999, p. 183). Thus, punctualization is often presented as the (always sought, always deferred) end goal of association, articulated with normative terms such as *success, winning*, and *strength*. In contrast, depunctualization, that is, exposure of any actor-network's internal heterogeneity to view, is treated as a sign of transformation, impending failure, or even dissociation (Law, 1989).

Here, however, I want to consider Law's heterogeneity/simplicity not as an invitation to decompose any given network, but rather as a spectrum of practices available to an organization interested in remaining durable. As I will suggest throughout this essay, when we speak of an organization, we can speak of its *politics of punctualization and depunctualization*, where an organization puts forth a punctualization (simplifying and hiding internal details) at one moment and then, at the next moment, the organization inverts the punctualizing process and instead deploys heterogeneity and complexity (and thus hides simplification). These are, to be faithful to Law, Mol, and Dugdale, shifting processes of ordering, deletion, revelation, presence, absence, and oscillations of simplicity and complexity. And the agent selecting from among simplicity and complexity may not be the researcher nor a dissociating external force (entropy, economics, politics, or otherwise); instead the agent oscillating between simplification and heterogeneity might be the actor-network itself. Because organizations are complex, heterogeneous networks, the points (punctuations) of contact that they invite others

to interface with can be drawn from the organization's stock of simplicity/ heterogeneity and thus might shift in terms of simplification (a single point of contact) or complexity (many points of contact) over time and space ("punctual" meaning, of course, a precise point in space or time). Indeed, this can be used to the organization's advantage: as I will show, the Digital Advertising Alliance is quite skilled at the politics of punctualization and depunctualization, here emphasizing unity, there emphasizing swarming heterogeneity, all in order to support the DAA's overall strategy of maintaining the dominant political economy of the Internet. In this sense, perhaps, depunctualization is not only evidence of an organization in crisis or of a technology that has failed, nor is it only a weapon for a scholar to wield against a coherent actor-network in order to take it apart. Rather, I suggest an additional meaning: depunctualization is also a tactic available to an organization seeking to remain durable.

The Digital Advertising Alliance (DAA)

First, I want to elaborate a bit on the main actor-network of this essay, the Digital Advertising Alliance (DAA). In the Internet's contemporary political economy, a large portion of content creation is subsidized by advertising. However, unlike the advertising that appears in, for example, a magazine, online marketers can utilize a range of tracking and predictive technologies to target specific ads at specific users. This is called Online Behavioral Advertising (OBA). OBA is, needless to say, controversial, because in order to work, websites, mobile network providers, Internet service providers, retailers, and social networking sites all constantly monitor and collect data on user browsing habits. They store this data and analyze it in order to produce profiles of users (Elmer, 2004; Gehl, 2014; Turow, 2011). Such profiles can be sold to other marketers and advertisers, allowing for the increasingly precise targeting of ads to Internet users.

Because of the privacy implications of OBA, state regulators and nongovernmental privacy advocates (Bennett, 2010) have criticized the online advertising industry. Rather than simply sit idly by while legislation and policy are drafted that might hurt the industry, seven organizations—the Better Business Bureau (BBB), the Direct Marketing Association (DMA), the Network Advertising Initiative (NAI), the 4As (an advertising agency trade group), the Association of National Advertisers (ANA), the American Advertising Federation (AAF), and the Interactive Advertising Bureau (IAB)—joined together to form the Digital Advertising Alliance (DAA) in 2010. Many of these organizations themselves are comprised of networks of advertisers and marketers. For example, the IAB is comprised of over 1,500 blogs, advertising networks, content creators, and media companies. All together, the DAA represents a massive portion of the online advertising industry.

In this sense, the DAA engages in the basic process of organizing: it associates. It punctualizes, simplifying online advertising's heterogeneity by standing in for nearly the entire online advertising industry. It produces reports and offers training programs to members. It commands and deploys resources (money, lawyers, experience, lobbyists, friendly bureaucrats, white papers, economic theories, technologies). It presents online advertising as beneficial to consumers and national economies. Above all, it opposes the anti-programs (Cooren, 2001) of restrictive privacy legislation (notably in the U.S. Congress, Canadian Parliament, and various legislative bodies across the European Union), regulation (by agencies such as the U.S.'s Federal Trade Commission), and criticism of OBA by privacy advocates.

As a punctualization of online advertisers, one of the DAA's key achievements is the creation of self-regulation practices, a common move used by contemporary trade associations (Gunningham & Rees, 1997; Nadesan, 2011). That is, rather than wait for states to regulate it, the DAA creates standards by which its members must adhere, thus offering a powerful counterargument to anyone who argues that a state must regulate OBA. The self-regulation system that the DAA has created is comprised of a set of principles, a website (aboutads.info), and a technology: a cookie-based opt-out system (explored in detail below). The website adheres to one of the self-regulatory principles: consumers should be educated about the benefits of OBA. The opt-out system adheres to another principle: consumers should be given a choice of whether or not they see behavioral ads (for a detailed overview of the DAA's self-regulatory principles, see Komanduri, Shay, Norcie, Ur, & Cranor, 2012).

Likely due to the DAA's formation in response to potential privacy-based regulation, most of the scholarship on the DAA focuses on the effectiveness of its self-regulation systems and practices (e.g., Balebako et al., 2012; Komanduri et al., 2012; Leon et al., 2012). There appears to be no scholarship on the DAA as an organization as such; that is, few if any scholars have considered its organizational practices. In what follows, I seek to use ANT concepts as analytical lenses to consider how the DAA maintains itself as an organization, specifically through the practices of oscillating between simplicity and heterogeneity, punctualization and depunctualization. I hope this work supplements the largely privacy-focused critical scholarship on the DAA by highlighting *organizing* over technical effectiveness.

In terms of organizing, the DAA's overall strategy is the maintenance and extension of the current political economy of the Internet: the exchange of personal information for access to websites, and the use of that personal information to build commodifiable profiles of users to be sold to marketers. Its main tools are the discourses and practices of self-regulation. As a punctualization standing in for its constituent members, the DAA challenges any legislation or regulation that would hamper this state of affairs, as is the

case with the proposed "Do Not Track" legislation in the United States (Bachman, 2013; Do-Not-Track Online Act, 2013). Very often, as is the case with lobbying, speaking with a single, loud, well-funded voice (very often that of Lou Mastria, the DAA executive director) while standing in for and translating a large number of actants (individuals, practices, technologies, and organizations) is the most effective approach. Such coherence is a key part of organizational strategy, implying strength and solidity (Czarniawska & Hernes, 2005b, p. 7). In other words, of course, the DAA is a quintessential punctualization in Callon's sense: by taking an entire industry and having one unified voice, the DAA becomes a node and simplifies the interactions between industry, consumers, and legislation.

The politics of punctualization and depunctualization: The many facets of the DAA

However, while the DAA often enrolls its heterogeneous elements (members, lobbyists, lawyers, friendly regulators, tracking technologies, advertisements, white papers, and so on) into a single, coherent organization to speak with a unified voice to regulators, there are many moments when it reveals a bit of its inner heterogeneity and complexity in support of its overall strategy of maintaining the current political economy of the Internet. In other words, at some points in time and space the DAA no longer punctualizes as a large organization, but appears as a multiplicity. Drawing on the valences of Law's conception of punctualization (described above), I will pay attention to those points in time and space when the DAA might appear far more heterogeneous, as well as how this oscillation away from unity is in service of unity. Here I will focus on three key moments of simplicity/heterogeneity: The DAA's use of spokespeople, its cookie-based opt-out system, and its AdChoices logo.

1. Speaking with one voice, speaking with many voices. A very simple tactic available to the DAA is to oscillate between singularity and multiplicity during various meetings with legislators and government officials. Often, the DAA sends a single representative when a regulatory body seeks input from lobbyists. For example, the DAA sent its representative, Executive Director Lou Mastria, to testify at the Senate Committee on Commerce, Science, and Technology hearing on "Do Not Track" legislation (Mastria, 2013). Do Not Track legislation was proposed by Senator Jay Rockefeller to regulate online tracking technologies (Do-Not-Track Online Act, 2013). In his testimony, Mastria explicitly mentions each of the seven DAA member organizations by name and reiterates the DAA's main argument that Do Not Track is not needed because the industry is already regulating itself:

> Self-regulation is the appropriate approach because it is flexible and can adapt to rapid changes in technology and consumer expectations, whereas legislation and government regulation, particularly in such a rapidly developing area, can stifle innovation, reduce competition, and add unnecessary costs (Mastria, 2013).

Thus, Mastria speaks for the associated companies and trade associations operating under the aegis of the DAA, playing a role often referred to in the organizational studies literature as "macro actor" (Czarniawska & Hernes, 2005b; Fairhurst & Cooren, 2009). Mastria becomes an obvious DAA punctualization, a single point of contact between the DAA-as-network and the Senate Committee on Commerce, Science, and Technology (itself, of course, a punctualized network).

However, in addition to a single spokesperson, the DAA also has the option of counting on one of its seven member organizations (such as the Interactive Advertising Bureau, the Direct Marketing Association, or the Network Advertising Initiative) to send representatives who will officially speak on behalf of their specific organizations while still adhering to the overall political economic goal of the DAA, the support of industry self-regulation.

For example, at the 2012 National Association of Attorneys General Conference, Ron Barnes, Direct Marketing Association (DMA) vice president of state government affairs, spoke about self-regulation in the marketing industry (Mastria, 2012). The DMA has a long history of using self-regulation to stave off government intervention into its activities (Hoofnagle, 2005). By citing that history and discussing current self-regulatory efforts (including the AdChoices program, which I will explore below), the DMA voices concerns about state-based regulation and who desires to self-regulate. The audience—U.S. state attorneys general—are a key constituency for the online advertising industry, since they can affect trade within the borders of their states. More recently, in 2014, the DMA's senior vice president of government affairs, Peggy Hudson, repeated the DMA's position on self-regulation in comments to the Federal Trade Commission (FTC):

> The DMA cautions against regulations that could stifle innovation in this nascent marketplace, arbitrarily pick technological winners and losers, and restrain overall growth. To best address important issues that arise in mobile marketing, such as the concerns with consumer privacy, the DMA supports the development of industry best practices and self-regulatory principles (Hudson, 2014, p. 2).

This was prompted by the FTC's inquiry into mobile tracking technologies, which allow mobile device users to be tracked across the Internet as well as through physical space. Again, the DMA cautions the FTC against regulation of these practices, recommending self-regulation in the name of growth and innovation. In both of these examples, the DMA spoke for itself; the DAA is never mentioned, despite the fact that the DMA participates in the DAA's self-regulatory scheme.

Another example: the Interactive Advertising Bureau's (IAB) general council and senior vice president Mike Zaneis (2011) has offered testimony to the FTC touting the IAB's self-regulatory program, which centers on the AdChoices program as well as the IAB's own advertising campaign "Privacy Matters."[1] Zaneis noted

> the IAB supports the use of a uniform icon, such as the Advertising Option Icon, to provide enhanced notice of data practices for consumers. The Advertising Option Icon, developed by industry as part of the self-regulatory program for online behavioral advertising, is an effective means for providing online notice in more traditional online contexts (Zaneis, 2011, p. 10).

This icon (discussed below) is a centerpiece of the DAA's self-regulatory system. However, as in the examples of the DMA above, Zaneis never mentions the DAA, only discussing the IAB's positions on questions of advertising, tracking, and privacy. As with the DMA, Zaneis points to the IAB's history with self-regulation as key evidence that the FTC should not support legislation to regulate behavioral marketing.

It might appear here that the DAA is not represented by Barnes, Hudson, or Zaneis. After all, in the official documentation of these events, these spokespeople are recorded as representatives only of their specific organizations, not the DAA nor the advertising industry as a whole. In other words, at these points in time and space, different networks (the DMA and IAB) offer different punctualizations that have little association with the DAA. Indeed, there appears to be no public evidence that the DMA, IAB, or other DAA member organizations are receiving explicit instructions or talking points from the DAA itself. However, while these representatives make statements on behalf of the individual organizations (the DMA and IAB, respectively), they also adhere to the overall strategic goals of the DAA: maintain the current political economy of the behavioral advertising and protect it from state-based regulation. The key alignment—the key dis/connection (Law, 2002b, p. 122)—among these organizations (the DMA, the IAB, and the DAA) runs through the construct "self-regulation," the program that all of these organizations point to fend off any regulation of OBA. Because the DAA administers the self-regulation program that the IAB, DMA, and other organizations participate in, to speak of "online advertising industry self-regulation" is to speak of the DAA, even if that name never appears in an official record of the event. Thus, at certain points in time (say, when the National Attorneys General conference is being held) and at a certain point in space (say, a meeting room in Washington, DC), the DAA might not appear singular but instead oscillates more toward heterogeneity, deploying different punctualizations than its typical spokesperson, Lou

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[1]The ads in the campaign are available at the IAB Privacy Matters website, http://www.iab.net/privacymatters/, as well as in Zaneis's (2011) report.

Mastria. This perspective reveals the astute punctualizing politics of the DAA: Barnes and Hudson of the DMA and Zaneis of the IAB can create a sense of democratic consensus by speaking with many voices (all singing in a chorus in praise of self-regulation), rather than appearing under the aegis of one large lobbying organization, the DAA, which might speak with only one voice. This mirrors a practice used by the U.S. military during the second Iraq War: the deployment of "message force multipliers." As Dean (2010, p. 99) argues, the U.S. military deployed multiple generals, ex-military members, and military contractors to media outlets to repeat messages about the effectiveness and necessity of the Iraq War. In that case, as in the case of the DAA, DMA, and IAB, repetition of talking points can amplify the volume of a message and make it appear as if there is an organic consensus rather than a coordinated campaign. In other words, there may be moments when many voices speaking are preferable to one loud voice. Although the U.S. military's "message force multiplier" program has been publicly documented (Barstow, 2008), the DAA's potential coordination is only apparent from the repetition of messages about self-regulation. Coordinated or accidental, ultimately it can be concluded that this depunctualization is in service to the overall strategy of challenging state-based regulation of online behavioral advertising.

2: Opt-out site, cookies. A key piece of evidence of DAA self-regulation is its behavioral advertising opt-out system, available at the website aboutads.info/choices.[2] This system is based on HTTP cookies, small text files that websites load onto a user's browser. Cookies often contain unique ID text strings, log-in information (like username and password), and site preferences. Because cookies have long been the object of criticism by privacy advocates and government regulators, the DAA's cookie-based system appears to be a logical move to stave off such criticism. Aboutads.info/choices works by gathering DAA member ad networks at one website and using that central site to provide special "opt-out" cookies. Once users actively select the opt-out option, their browsers will receive the opt-out cookies from the DAA members. These special cookies allow users' browsers to signal their intent not to receive behavioral advertising across the web by DAA members.

A single opt-system is a quintessential punctualization. It tames complexity by providing a simplified interface to "opt-out" of seeing behavioral ads. To illustrate this, I should do a bit of my own depunctualization by explaining how cookies are used to track Internet users. For security purposes,

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[2]The analysis of the adchoices.info site was conducted during 30+ sessions with a range of browsers (Firefox, Chrome, and Safari) on Linux, Windows, and Macintosh systems. Each session was preceded by purging all cookies, browser histories, and tracking technologies (such as Flash cookies), and the sessions were conducted from six different ISPs and likely a dozen IP addresses. The findings discussed here replicate the findings of Leon et al. (2012) and Mayer and Mitchell (2012).

HTTP cookies can only be read by the domain that set them. So, if a user visits http://www.google.com and receives an HTTP cookie and then in the next moment goes to http://www.yahoo.com, Yahoo cannot read the Google cookie, and vice versa. This is to prevent websites from illicitly reading user names and passwords from other sites. Cookies can be useful to a site that wants to allow users to have an account, and their inability to be read by external domains helps secure the automatic log-in process.

Based on this description, it seems difficult to imagine how users can be tracked across the web. However, the innovation of advertising networks helps to create cross-site tracking systems (Desilva and Phillips, LLC, 2008). Modern web pages are comprised of a mix of content drawn from multiple servers. For example, a newspaper site could be comprised of content hosted on the server owned by the newspaper as well as content gathered from an advertiser's server. The content from the ad server can include a cookie. If a user visits the newspaper site and then goes to, for example, a sports site that also contracts for ads from the same ad server as the newspaper, the advertiser's cookie can begin the process of profiling that user (he's interested in news; he's also interested in sports); this is a central practice in Online Behavioral Advertising (OBA). Massive advertising networks, such as DoubleClick (owned by Google) and Yahoo, which provide ads across thousands of websites, allow for pervasive tracking, profiling, and manipulation of users as they move from site to site across the web. Major sites often contract with multiple ad networks, meaning that a user will receive dozens of tracking cookies by visiting just one site. This is the practice that has gotten much attention from privacy advocates and regulators (e.g., Chester & Mierzwinski, 2008). These cross-site tracking ad networks participate in the DAA's self-regulatory opt-out scheme at aboutads.info/choices.

Whenever OBA is critiqued or threatened by state regulation, the DAA members can point to aboutads.info/choices as a notable example of self-regulation, where an architecture of opt-out is implemented by members who can provide opt-out cookies in one convenient location. For the regulator checking up on the DAA's assertion that it self-regulates, this punctualization, aboutads.info/choices, provides a simplified, unified interface that confirms the DAA's promises. As the executive director of the DAA, Lou Mastria (2013), puts it in the Senate hearing on Jay Rockefeller's proposed Do Not Track legislation, "The DAA Program provides consumers with a one-button choice mechanism to stop the collection and use of web viewing data…. [The program] provides individuals with a simple and easy means to indicate their preference about the collection of such online viewing data" (pp. 1–2). This self-regulatory argument has been accepted by many government regulators and scholars (Schmierer, 2011), and, as I discussed above, is a key alignment among the heterogeneous organizations included in the DAA.

However, closer examination of the aboutads.info/choices system reveals a simultaneous emphasis on heterogeneity alongside Mastria's "simple and easy means" for Internet users to avoid being tracked. The DAA's Aboutads.info/choices works like this: during the opt-out process, each DAA-member ad network must place a number of cookies on the user's browser. The cookies must signal the user's intent to not see behavioral advertising, and they must be set to not expire for at least five years. Beyond those requirements, implementation is up to the individual ad networks, and here things begin to break apart and depunctualize. Individual ad networks place anywhere from 1 to 19 cookies on a user's browser. With over 100 ad networks participating in this site, a user who chooses to opt out of receiving behavioral ads from all of them will receive roughly 150 cookies. The cookie contents vary; although many are obviously opt-out cookies (with names such as optout.mookie1.com), some only indicate that they are opt-out cookies within the actual files themselves (they might contain "opt out" or "oo" in the content field). Some of these cookies (based on my analysis with Firefox, Safari, and Chrome) include unique ID strings, which can allow for users to be tracked. Very often, the opt-out system fails to work 100%; every visit I've ever made with Firefox, Safari, and Chrome browsers has seen at least one, but often more, cookies fail to set. Other researchers have noticed the same problem (Komanduri et al., 2012, p. 629).

Moreover, the time-scale of five years' lifetime for each opt-out cookie is often rendered moot by the constant changes in user browsers, computers, and the ad networks themselves. If users switch browsers or buy a new computer, they would have to start the process all over again. Users also have to do this process for each of their devices (desktops, laptops, phones, and tablets). If they delete cookies (as users who are privacy-conscious regularly do), they would also have to repeat this process, unless they set exceptions for each and every ad network cookie. Even setting such exceptions won't work when ad networks and DAA members change over time. Privacy researchers have noted that when an ad network is acquired by a larger company, which happens a lot, their old opt-out cookies are often invalidated (Komanduri et al., 2012, p. 634). Or, if an ad network joins the DAA, the new ad network opt-out cookie is not automatically placed on an opted-out user's machine.

Ultimately, the DAA needs punctualization whenever regulators want an example of self-regulation in action, and aboutads.info/choices serves that role. It is a simplification of the opt-out process, available immediately at a relatively easy-to-remember URL. But the depunctualized, complex technical implementation of a system based on opting out with 150 heterogeneous cookies for each browser and device is anything but "simple and easy" for the privacy conscious. For the system to be 100% effective among end users—a goal stated by Mastria (2013, p. 11)— users would have to set exceptions for

each cookie to avoid having them be deleted; monitor the site for new DAA members, watching out for those that drop out; monitor DAA members that merge with one another or are acquired by other firms; and repeat this process on each and every device they own. As studies have shown, this is a confusing and baroque system (Leon et al., 2012; Mayer & Mitchell, 2012, p. 422). Essentially, the end user is required to constantly police *individual* members' technical implementations of the abstract architecture established by a larger organization, the DAA. Rather than dealing with the punctualized, single interface, the end user is asked to deal with a swarm of heterogeneous actants (cookies, various companies, individual devices). The singular punctualization fades into the background and multiplicity takes its place. Simplicity and heterogeneity are deftly oscillated by the DAA in order to maintain online behavioral advertising. OBA is maintained by both appeasing regulators with a simplification and deploying multiplicity to wear down the resistance of Internet users seeking more privacy.

3: A logo, a billion ads. Although the DAA might point to the aboutads. info/choices page as a key pillar of their self-regulatory practices, if we critically consider the layout of the *main* Digital Advertising Alliance self-regulatory page, aboutads.info (rather than the aboutads.info/choices sub-page), we see a very different emphasis on the part of the DAA. The most prominent detail on DAA's main page is a magnified triangular icon, the AdChoices logo (Mayer & Mitchell, 2012, p. 423). Judging from this site, and from evidence such as press releases and YouTube videos, the DAA's overall strategy is not to promote the aboutads.info/choices opt-out cookie system to end users. In fact, the opt-out system is *navigationally buried* on the Aboutads.info page.[3] Rather, their focus is another punctualization, the AdChoices logo, which appears on any behavioral-based advertisement offered by a DAA member on any website. Introduced in 2010, the AdChoices logo is the most common evidence the DAA points to when it argues that it can self-regulate. The display of the AdChoices logo alongside DAA-member behavioral ads is central to their self-regulatory principles (Interactive Advertising Bureau, American Association of Advertising Agencies, Association of National Advertisers, Better Business Bureau, & Direct Marketer's Association, 2009; Komanduri et al., 2012). As I will show, this logo is also accompanied by a less promoted, but quite effective, deployment of heterogeneity.

How does this AdChoices logo work? On any ad that is connected to behavioral tracking by a DAA member, a much smaller version of triangle

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[3]One would assume that aboutads.info/choices, a central piece of evidence used by the DAA in their argument to state institutions that they self-regulate, would be prominently displayed in the aboutads.info navigation. However, as of this writing, the link to aboutads.info/choices is buried within the subpage http://www.abou tads.info/consumers. In basic web design, this is a clear indication that the aboutads.info/choices page is low in the overall information architecture of the site.

logo (sometimes accompanied with the text "AdChoices") appears. The DAA has produced a standard for what happens when a user clicks on the logo: He or she is given information about the ad—who provided it, how it may be based on the user's browsing activities, the option to set advertising preferences, and a link to the ad network's privacy policy (Komanduri et al., 2012, pp. 611–614). This information and these options are presented every time a user clicks on the AdChoices logo, as is mandated by the DAA's self-regulatory principles (Interactive Advertising Bureau et al., 2009).

Here, then, is a standardization, a key aspect of punctualization. As Callon notes, such a standardization "makes a series of links predictable, limits fluctuations, aligns actors and intermediaries, and cuts down the number of translations and the amount of information put into circulation. It operates by standardizing interfaces—that is, by standardizing and constraining actors and intermediaries" (Callon, 1991, p. 151). For Callon, a strongly convergent network—that is, a punctualized network that appears to be simple and straightforward—is one that relies on such standardizations. The AdChoices logo is akin to other technical standards in that it helps regulate industry practices; all DAA-participating ad networks must adhere to the standard or risk being removed from the DAA. As such, this standard is a key process in the self-regulatory scheme.

However, as in the case of the opt-out cookies, the specific implementations of this standard are left up to individual advertising networks and content providers. Here we once again see heterogeneity reemerging from behind the punctualized logo. The variety of implementations is staggering, demonstrating a practice similar to the cookies discussion presented above: a tactic of depunctualization—the presentation of a complex swarm of elements. Rather than appearing as one coherent network, the DAA depunctualizes into individual networks that the individual user engages with one-on-one. For example, clicking on the AdChoices logo next to one ad might take the user to Yahoo's AdChoices page,[4] which explains to a user that advertisements might be based on one of many things: the contents of the specific page, the user's registration, search history, or "predictions about your interests generated from your visits to other Web sites." There's no indication where the specific ad the user clicked on came from (and indeed, as Komanduri et al (2012, p. 620) have shown, there's no real way to tell). In addition, Yahoo offers a link to its privacy policy as well as a page sketching their profile of the user.[5]

All of this meets the basic requirements of the DAA AdChoices standard (cf. Komanduri et al., 2012, pp. 611–612). However, Yahoo's implementation

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[4]Available at http://info.yahoo.com/privacy/us/yahoo/relevantads.html, last accessed December 9, 2014.
[5]For example, I was categorized as 'Life Stages > Parenting and Children' based on about 15 minutes of web browsing.

of that standard is markedly different from others. For example, clicking on *another* ad's AdChoice logo might take one to Google's AdChoices page.[6] Google's page offers a pitch for the Adwords and Adsense programs, a basic explanation of behavioral advertising, and the differences between tracking practices in the United States and Europe. The links Google offers include the DAA site (aboutads.info) to the aboutads.info/choices page. Notably, this is under the heading "Important Information." Under "Tools, controls, and resources"—a more logical place for a link to the DAA opt-out system— Google offers a link to a page where users can set their *Google-specific* ad preferences, a link to aboutads.info (but not the Choices opt-out cookie page), and other Google-specific tools to set privacy and ad preferences. Judging from the navigation and layout of this page, the overwhelming message is: the user should work specifically with Google, rather than with the DAA (and hence the entire self-regulated online behavioral industry), in setting behavioral advertising preferences. I found further variety of implementation of the AdChoices logo with other ad networks and marketing firms, including Evidon, TrustE, and RocketFuel.

In effect, this variety of implementations breaks OBA into a swarm that users might not be equipped to deal with. Studies have found that users do not read privacy statements due to their tedious legalese (McDonald & Cranor, 2008; Schmierer, 2011, p. 13). Basic Web design and human-computer interaction principles would predict that the addition of myriad different implementations of privacy notifications, each with different navigation options and information, would only exacerbate this problem (even if the language is simpler than more baroque privacy statements).[7] Other studies have shown major variations in definitions of "tracking" and "opting out" among the various DAA members. (Komanduri et al., 2012, p. 616). Finally, *Ad Age*, the advertising trade magazine, reported that only 6% of survey participants were even aware of the AdChoices logo (Kaye, 2014). For DAA members—organizations whose central function is compelling, ubiquitous, and clear communication (i.e., in the form of advertisements and design)—this is quite a contradiction. Although these ad networks strategically work together under the aegis of the DAA as that organization speaks to regulators, they seek to dissolve into a swarm of networks when individual users confront them on the Web.

These tactics of punctualization and depunctualization are perhaps best summed up by the DAA's YouTube video introducing the AdChoices logo to

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[6]Available at http://support.google.com/adsense/bin/static.py?hl=en&ts=1631343&page=ts.cs&rd=1&contact=abg_afc, last accessed December 10, 2014.

[7]And to be fair, the information provided on the individual sites is far simpler than the baroque legalese that one normally finds in privacy policies; cf. Schmierer, 2011, p. 46.

the world (Meet the AdChoices Icon, 2012). According to this video,[8] the AdChoices logo is "out there, working hard, one banner ad and one set of eyes at a time." In other words, the DAA's preferred system is highly granular: its organizing principle is the confrontation between an individual and an ad. The logo is indeed a punctualization; it stands in for the larger DAA network, making heterogeneity absent through its presence, offering a simple signal that some sort of behavioral tracking is happening (and that the industry cares about user privacy). But its deployment along with billions of ads, as well as the implementation of standards used by each DAA member, mark this punctualization with complexity. At each point when a behavioral ad appears, the DAA's conception of "choice" is as follows: the user can choose to click the icon, choose to read a privacy policy, and choose to set preferences for one specific ad network. The user may repeat this for each of the over 100 other ad networks participating in the DAA. In this way, the user is subtly configured and moved away from seeking redress against behavioral advertising in the aggregate. Behavioral advertising is depunctualized into billions of ads confronted by billions of users, a constant swarm that simultaneously makes certain network details present (you're being served ads based on your behavior) while deleting others (this is a massive, heterogeneous network of marketers, advertisers, servers, psychological profiles, and databases).

Conclusion

This work is indebted to John Law (2002a, 2002b), who in turn is indebted to semiotics, a science of differences, presences, and absences. Returning to Law's incompatible and reciprocal concept of heterogeneity/simplicity, we can summarize things in terms of absence and presence. It is rather easy to see what is absent when Lou Mastria speaks for the DAA at a hearing in Washington, DC: an entire industry of online advertisers, tracking technologies, nanosecond auctions for user attention, extensive profiles of individuals, sociological categorization of people, psychological techniques, browsers, content providers, and social networking sites. The DAA's role is in part to stand in for all of this, to be a punctualization, simplify a complex industry, and offer a repeated narrative of self-regulation. But what is *absent* when this internal heterogeneity is more obvious? What is absent when an Internet user looks at all of those opt-out cookies stored on his hard drive, or when another Internet user sees ad after ad that appear to be increasingly tied to her browsing habits? What is absent here is *simplicity*, of course. There is no simple solution offered by the DAA to the very troubling practices of

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[8]Notably, the AdChoices YouTube video has been viewed only 13,000 times as of this writing (March 19, 2015). The advertising industry is having trouble getting the message out, it seems.

online behavioral advertising and increasingly sophisticated tracking. Thus, simplicity is reserved for display to regulators (look at our self-regulatory principles!) while complexity is reserved for end users (give up on trying to opt out).

These are the politics of punctualization and depunctualization. The DAA is displaying a keen mastery of what Dugdale (1999) has termed the "oscillation" between singularity and multiplicity in any actor-network. Sometimes, the DAA seeks to deploy the right punctualization at the right time and in the right space, to be politically and economically punctual (as in when a Senate committee is called to order). Other times, the DAA's presence, its ability to be punctual, will be notable by its absence (as in when an Internet user is trying to plumb the depths of behavioral tracking). Ultimately, of course, an opt-out cookie on a hard drive is no less a punctualization than an executive director speaking to a Senate committee; we can trace the inner heterogeneities of the cookie just as deeply as we can the DAA, and moreover the cookie stands in for the larger online behavioral advertising industry. In that sense, 150 cookies—roughly the number of opt-out cookies received during an aboutads.info/choices session—might act as "spokesthings" for the DAA, but of course the qualitative sense of control an end user might feel in the face of 150 punctualizations is different than a Senator might feel in the face of a single spokesperson. The situation is worse when the spokesthings are billions of Internet ads. Given the fact that cookies, logos, and ad network opt-out pages are at one moment simplified by the DAA and the next emphasized as heterogeneous demonstrates that the DAA depunctualizes just as well as it coheres.

These shifting movements between simplicity and heterogeneity, punctualization and depunctualization deployed by the DAA will no doubt continue to be important. Web-based advertising is increasingly articulated with traditional mass media advertising, is growing in economic impact, and is converging on mobile devices, which themselves associate payment, identity, navigation, health, and entertainment systems. As each of us is tracked through space and time with mobile devices and wearable computers, part of what makes us who we are—what punctualizes us—will increasingly be the industry the DAA stands in for. The DAA of course recognizes this. In his 2014 year recap blog post, Lou Mastria promises big things for 2015:

> In just a couple of weeks … we'll be launching our first consumer-facing app— AppChoices… . We will also be launching a Mobile Browser Choice Tool as a mobile version of our existing Consumer Choice Page (Mastria, 2015).

Given the short history of the DAA, where tools offering "choice" are punctualizations of a hugely pervasive and sophisticated tracking industry

with an interest in avoiding government oversight, the production of mobile versions of the web system detailed here indicate the DAA's recognition that mobile- and app-based behavioral tracking will be the next practice under trial, whether due to the protests of privacy advocates or the political interests of state regulators. Although the exact implementation of AppChoices and the mobile Choice Tool are yet to be revealed, it is probably safe to say that the DAA will continue to engage in the politics of simplicity and hetero-geneity—the politics of punctualization and depunctualization—to fend off state-based regulation in favor of self-regulation.

Ultimately, I suggest that future ANT-based work on organizations ought to take seriously ANT's skepticism about the inherent coherence of any organization. Many studies seek to explain how or why an organization coheres, and this is certainly part of the task. But that cannot be the end of the work. If the case of the DAA is generalizable, ANT-based organizational studies must also consider the ways in which organizations present them-selves not only as simplified but also heterogeneous, as well as the effects simplicity/heterogeneity can have on the other actor-networks that confront such oscillations. Depunctualization thus is not just a conceptual tool for the researcher, nor is it a description of a crisis in an actor-network; it is organizational practice that must be accounted for in any actor-network.

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