



Calculation, qualculation, calculation: shopping cart arithmetic, equipped cognition and the clustered consumer

Franck Cochoy

Université de Toulouse II, France

Abstract. *This paper investigates how such a trivial device as a shopping cart may surprisingly contribute to shaping exchanges in supermarkets. First, the shopping cart completely modifies consumers' calculations. It does so by leading them to accomplish particular gestures, by transforming a budgetary constraint into a volumetric one, and by providing them with true calculative tools. Second, shopping with a cart also implies some 'planned' cognitive processes. These processes concern interplay between family needs, selection equipment (such as a shopping list) and market information (packaging, for example). The combination of these elements moves the consumer from mere calculation (price-based computing) to 'qualculation' (i.e. quality-based rational judgements). Third, and in particular, since it favours the transformation of the individual consumer into a collective one (or 'cluster', i.e. a small group of people gathering around the same device), a shopping cart functions as a scene or as a frame for collective 'calculation' (from the French verb 'calquer', i.e. adjusting one's standpoint to that of another, and vice versa). **Key Words** ● calculation ● consumer behaviour ● market devices ● shopping cart*

The past 20 years or so have witnessed a remarkable renewal of the anthropology of consumption. This renewal may be illustrated with (at least) three distinct contributions (varied in origin, size and contribution). First and foremost, since the Consumer Behavior Odyssey at least,¹ the huge field of (mostly) American consumer research has opened our eyes to the 'situated' and 'cultural' aspects of consumer behaviour, far beyond the 'cognitive' and 'functionalist' dimensions studied in the classical/managerial marketing literature (Arnould and Thompson, 2005; Belk et al., 1989; Sherry, 1995). Second, in 1998, the British anthropologist Daniel Miller proposed a 'theory of shopping', where he set out to show that ordinary consumption is a matter of love, social relationships and even sacrifice, which

thus deserved the scrutiny of classical anthropology, both in terms of research methods and analytical frameworks (Miller, 1998). Third, the French sociology of science expert Michel Callon designed a collective program where he proposed a new research agenda for economic anthropology. In contrast with the latter discipline which endlessly denounces *homo oeconomicus* as an unrealistic figure, Callon observed that calculation is nevertheless an ordinary and ubiquitous practice in economic settings. Callon thus proposed to explain the mystery of calculation pervasiveness by unveiling the processes, knowledge and devices which make calculation spatially, socially and technically possible (Callon, 1998; Callon and Muniesa, 2005). The actual irony (and possible tragedy?) is that to date these three streams of research, while individually contributing to the renewal and enrichment of consumer anthropology, have either simply ignored each other, at the risk of reinventing what had already been developed in the other two disciplines (see Miller's neglect for consumer research [Arnould, 2000; Arnould and Thompson, 2005]) or even came into conflict with each other (see the Miller–Callon controversy [Callon, 2005; Miller, 2000]), with the risk of stressing certain differences which has as a final result the hiding of some cross-misunderstandings and potential areas for agreement.

In this paper, I would rather like to take the opposite direction and highlight possible convergence between the three perspectives. I propose to do so through the examination of *how a simple shopping cart may redefine the consumer's calculation*.² The idea is that, thanks to two of its characteristics, this device may favour the cross-fertilization of the three research approaches in question. On the one hand, the shopping cart is a 'brand-new old object' that neither consumer research, nor classical anthropology, nor the sociology of calculation has extensively studied yet, perhaps because carts intervene *after* the consumer choice, calculation or loyalty in which each perspective is interested.³ This relative novelty of shopping carts gives me a chance to avoid controversies over territory and thus to focus on fieldwork rather than on literature debates (which should not be forgotten, of course, but will better be evoked in the concluding section). This view is consistent with actor-network-theory, which proposes that any predefined conception of social phenomena and actors be avoided, and suggests rather that all the entities at play in the observed field be monitored, be they single or collective, human or non-human (for instance: the cart and its 'pushers' in the supermarket). This theory also argues that such entities may associate, combine and/or exchange their respective properties to shape the contours of social action (Latour, 2005a). The shopping cart is nonetheless connected with all three research perspectives mentioned above: its use takes place in natural settings, studied in consumer research. It rarely appears in this literature either as a peripheral item in central consumer scenes (Sommer and Aitkens, 1982) or as a central item in peripheral consumer issues (Hill and Stamey, 1990)! It participates in consumer loyalty as in Miller's book, where a shopping cart 'illuminates' the cover, and sometimes briefly shines in the text! It also discreetly (if not invisibly⁴) takes part in the Callonian calculation processes (Callon and Muniesa, 2003). I hope then that following the shopping cart and its pushers, in order to underline its central role in consumer



behaviour, may appear a good way of building a bridge between the different theoretical perspectives to which it relates.

The thesis of this paper is as follows. Despite its mundane character, the shopping cart contributes to modifying the consumer's calculation. It does so first in leading them to perform certain specific gestures, then in overshadowing a budgetary constraint with a volumetric one, and finally in providing them with true calculative tools. Shopping with a cart also involves some 'planned' cognitive processes. These processes concern interplay between family needs, selection equipment (such as a shopping list) and market information (packaging, for example). The combination of these elements moves the consumer from mere calculation (price-based computing) to qualculation (i.e. quality-based rational judgements [Cochoy, 2002]). Moreover, since it favours the transformation of the individual consumer into a collective one (or 'cluster', i.e. a small group of people gathering around the same shopping cart), the shopping cart functions as a scene or as a frame for collective 'calquation' (from the French verb 'calquer', i.e. adjusting one's standpoint to that of another, and vice versa). I suggest that such findings may contribute, even modestly, to sketching a dialogue and/or some possible common research agenda for all perspectives engaged in the anthropology of consumption.

Methodology

The paradox of a sociology of shopping cart use is that the more trivial the subject, the more complex the research. Nothing is more trivial than shopping cart use, since this behaviour articulates an ordinary object with a very basic, highly primitive activity (collecting goods for one's survival) (Testart, 1988). At first glance, researching such a topic is discouraging; the researcher faces daily routine, common gestures, obvious repetitive tasks. The fact that the observer shares the social position of the subject under study is of no help. Rather it complicates the problem further. Looking outward to the supermarket or inward to one's own shopping experience leads in both cases to the same conclusion: there is nothing worth seeing or saying about pushing carts, except that it seems to be an obvious, almost natural and somewhat anecdotic activity. However, I rather propose to take this difficulty as a challenge and, instead of surrendering, this paper intends to show that shopping carts in fact discretely enrich and reorient the economic and managerial 'shaping of shopping' by interacting with all other people, frameworks and devices.⁵

However, assessing the contribution of shopping carts to the shaping of market exchanges is not an easy task. Consumption specialists are well aware that interviews or questionnaires are inadequate to grasp 'low involvement' consumption behaviour: people 'do' their shopping rather than 'think' about it, and so they are often unable to give any verbal account of their practice (Underhill, 1999). What is true about shopping is even truer with cart use; the only significant result of interviewing people on such a topic is to make them think the researcher is crazy!

Observation is a little bit better since it may be done discreetly, but it mostly accounts for either ordinary ‘already-known practices’ (arranging, throwing objects, pushing, leaving and finding the shopping cart again, etc.) or spectacular scenes which would of course excite classical anthropologists (child ‘gymnasts’, professional uses, exceptional loads, etc.) but which do not convey much meaning about the average shopping experience under investigation here.

In fact, such difficulties may be overcome if three conditions are met. First, we have to admit that each method needs to be repeated over a long period of time, to get only a small set of relevant results. If the comparison were not pretentious and completely out of proportion, one could say that collecting the significant aspects of shopping cart use in supermarkets is like tracking neutrinos in the universe. In the very same way that 100,000 gallons of dry-cleaning fluid had to be placed in a one-mile deep swimming pool to get a few traces of neutrinos which could still be discussed (Pinch, 1985), thousands of empirical situations have to be observed in order to collect some rare interesting ‘cart figures’ that may be brought to academic scrutiny. This risky but pedagogical parallel leads us to accept that we do not have to comment upon each cell of a spreadsheet or systematically analyse the collected field notes or verbal items; rather, we need to accept that a lot of work has to be done for almost nothing, except for highlighting a few outstanding points. Second, the more diverse and numerous the methods, the greater the chance of obtaining valuable results. In order to assess the composition of an unknown component, chemists use a lot of different reagents and instruments; similarly, in order to express the hidden contributions of carts, we have to be as flexible as chemists. Rather than relying on the dramatic and exclusive methodological choices strangely praised in social sciences – a single observation *or* a set of interviews; a qualitative study *or* a quantitative survey; a thick description *or* a fierce measurement; a robust explanation *or* a comprehensive account, etc. – this research rather assumes that using all methods without any *a priori* is the best (and only?) way to have a chance to develop a sociology of shopping cart use. Moreover, it follows that in order to get such results, diverse methods should not only be used, but also combined with each other.

Therefore, I will rely on:

- 1 A long-lasting participant observation conducted with Catherine Grandclément, which gave us a large database of varied materials (hundreds of photographs, field notes, academic and press articles, web pages, etc.);
- 2 The one-year multi-methods study conducted with my colleagues and students. Out of this study, I will particularly use:
 - Three ‘quantitative observations’. The idea of quantitative observation acknowledges a research method that Paco Underhill (1999) promoted precisely to make sense out of the millions of individually insignificant gestures which take place in shopping arenas. This idea is two-fold: first, it assumes that the best description is the one which does not forget a sense of proportion; second, it posits that observations which do not have any identifiable significance in themselves may become meaningful once they are recorded,



made comparable, and aggregated. This double idea led us to design three ‘observaires’, that is, a code grid aimed at systematically ‘questioning’ observed things and behaviours rather than people (the neologism ‘observaire’ signifies the combination of ‘observation’ and ‘questionnaire’). With the first observaire, we reported on 781 clusters (i.e. the group formed with a shopping cart and its ‘members’) at the shop’s entry, in order to quantify their demography (how many people, which age, gender, etc.), the position of people (who pushes, sits in, etc.), the equipment of the cart (personal belongings, bags, cool boxes, etc.). With the second observaire, we reported on 705 clusters at the cash registers, in order to quantify the content of shopping carts (how much they carry, how things are arranged in them, what is used in their chain-locks, etc.). With the third observaire, we described how (in the beverage aisle) 234 clusters put bulky packs of bottled water into the cart (in order to monitor planning strategies, strength, age and gender issues, etc.). All quantitative observations were conducted over a typical week in a large supermarket in the Toulouse region in France.

- 77 transcriptions of short verbal exchanges between consumers trying to adjust their views in order to know what to pick up and what to put in their unique shopping cart; these exchanges have been taken ‘live’ in different supermarkets, without the consumers knowing they were observed, thanks to an immediate transcription (from memory).
- Three focus groups conducted with consumers (six to eight people) all male, all female, and mixed (elderly people in the latter case) respectively. These focus groups were animated with a set of photographs referring to typical shopping situations. The combination of focus groups and photographs – i.e. the crossing of (respectively) a classical method in marketing research and the ‘photoelicitation’ technique forged in qualitative consumer research (Heisley and Levy, 1991) – proved a successful solution to overcoming the difficulty of interviewing people on shopping cart use. Indeed, the focus group’s logic avoids the artificiality and embarrassment of the single interview and favours the lively interactive exchange of experiences; the use of pictures helped people to place themselves in real settings and activate their own recollections.

As explained above, each method is used only to produce a small set of salient results. These methods are complementary: each one of them is designed to shed light on some particular aspect of the field that the others are not able to grasp (objects, gestures and their proportions with observaires, real-time exchanges with verbal action recording, collective reflexivity with focus groups). Since the scarcity of relevant facts is the starting point for the research, the idea is not to triangulate homogeneous sets of data, but rather to obtain the best figures each tool is able to provide. These figures are then combined to produce an overall picture, thanks to their complementary character. This picture is precisely the one I presented in the introduction, i.e. how shopping carts happen to diffract consumer calculation into postponed calculation, equipped qualculation and collective calquation.

Calculation

From immediate to postponed calculation

The perspective adopted here follows shopping cart uses to reveal the device's contribution to consumer cognition. In this respect, the first role of a shopping cart is that of a 'buffer': it creates a storage zone which is able to temporarily dissociate choices from payment. This separation begins on the parking lot, where the appropriation of the cart follows a 'rental for free' scheme. Such an operation, far from being anecdotic, commits the consumer. As Charles Kiesler (1971) and Beauvois and Joule (1987) showed, committing people to a sequential decision process helps to make them take decisions they would not have taken spontaneously, without having to force them and/or to hide information from them. Indeed, each further step made in the decision process makes giving up more costly. Supermarket choices clearly follow a similar pattern. Moreover, the shopping cart itself physically reinforces the person's commitment. First, in obliging the one who takes it to place a token into it, the shopping cart implicitly leads its pusher to become a shopper. If the consumer thinks she may come out of the shop without any purchase, why then should she take a huge cart? Commitment to the purchasing process reinforces itself all along the shopping journey. Since it does not really favour the neat stacking of goods (generally, it does not have shelves), the shopping cart makes it far more of an effort to the consumer to remove a product from the cart than to put one into it. To remove a product, the consumer must not only bend down, remember it and sometimes dig out other items which cover it, but must also assume the cognitive dissonance of contradicting already made decisions. Moreover, the commitment to continue shopping grows along with the number of items the customer has already put into the cart. The 'sunk goods' (in the cart) play the role of 'sunk costs' (in the industrial world), so to say.⁶ Finally, the consumer's commitment is confirmed at the end of the journey, with almost all the consumers equipped with a shopping cart coming back with something. There are at best 10 percent of almost empty carts (however, it seems as if buying just a little is a way to handle cognitive dissonance between having a cart and not consuming heavily!). Even the potentially striking and painful discovery of the total amount spent on the cash ticket very rarely leads to reimbursement claims.

Between taking the cart and payment for the goods, the use of the shopping cart as a buffer creates a short moment of abundance and a pause in calculation (Pia Pozzato, 2001) as if all choices were free until reaching the cash register. It looks in fact as if the extreme profusion and accessibility of objects encourages the consumers to disturb the neat collection of products, to compulsively pick up goods from the shelves and put them into their 'rolling Santa Shop's sack', whilst 'forgetting' the prices along the way. Prices are forgotten in the literal sense, since price labels remain stuck to the shelves. But they are also forgotten in the figurative sense, since (and consequently) a few seconds after choice the consumer does not really have the means to recall the value of the products chosen. Thus, the

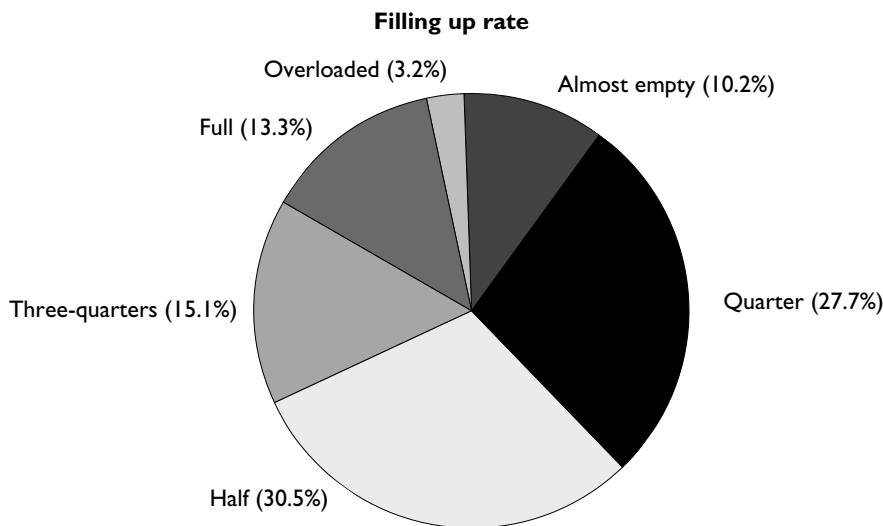


Figure 1

Filling up rate, observatoire 'full clusters at cash registers'

shopping cart presents itself as a very particular 'calculative space'. Rather, it acts as an instrument that first makes one 'de-calculate', and encourages for a time the accumulation of things without calculation, rejecting the financial assessment until later.

As a calculative space, the supermarket shopping cart is an interesting object. It is a perfect example of a device that allows products to be arranged in a single space, thus allowing several possible forms of verification and estimation. Normally, prices are not allowed in this space (they remain attached to the shelves), which explicitly orients the consumer's calculation towards non-arithmetic forms. (Callon and Muniesa, 2003: 196, footnote 18, my translation)

From a budgetary to a volumetric constraint

Consequently, in putting prices between parentheses and in facilitating 'mass' purchases,⁷ the shopping cart has the remarkable ability of – albeit perhaps partially – substituting the budgetary constraint of the consumer with a volumetric one. With such a device, the objective limitation of purchases is less the buying capacity of the consumer (whose fulfilment is impossible to assess in spite of prices and adding-up instruments) than the volumetric capacity of the cart (whose filling-up will necessarily have to stop once it cannot carry anything more, even if its hunger is remarkably elastic and rarely satisfied).

While surgeons have recently been trying to diminish the appetite of obese people in by-passing their stomach with a silicone band, shopping carts manufacturers have long worked in the opposite direction, stretching the capacity of their vehicles from a few litres in the thirties to more than 240 litres today, with the hope



Figure 2

Favouring carts' obesity (France)

of course of expanding consumers' purchase capacity and practice! By reducing the volumetric constraint as far as possible they have succeeded in keeping the lead over consumers' appetites. Less than 5 percent of carts are overloaded in our own data. We should not forget, however, that most of the other carts in the sample would have been classified as overloaded with the previous generations of shopping carts. It is nevertheless interesting to note that this 'size race' does not exclude the continued existence of individual baskets. The coexistence of maxi rolling carts and small arm baskets seems even out of date, with a dramatic comeback of the original basket-carriers (Grandclément, 2006). The latter help to double the purchasing capacity of basket carriers while considerably lightening physical effort, and offering a lighter alternative to giant carts. The proliferation of such contradictory solutions demonstrates an endless dilemma. Proposing one or two baskets expands the shopping capacity of consumers who do not want to shop with a cart, but also encourages them to persist in 'no big cart' shopping. The volumetric constraint the consumer plans for him/herself (when he/she decides,



for instance, not to take a cart) is faced with the volume limit the shop offers to her (as a means to contradict the former, but also as a means to adjust it more precisely; many shops today offer different sizes of shopping baskets and even of carts, e.g. in Italy).

The new volume limit modifies the consumer's calculation. First, the filling up of carts defines a calculation in terms of sequencing/planning purchases. The shopping cart – assisted by the car and the refrigerator – favours the gathering and spacing-out of supply operations. This is also the case for the technical characteristics of shopping carts. Since they are deprived of shelves, in order to accommodate a lot of items, the consumer him/herself is left with the task of solving a dilemma. How to get everything in without crushing fragile merchandise? In our 'observatoire' aimed at quantifying the morphology of shopping carts at the cash register, we checked on their 'logical' or 'illogical' appearance.⁸ Eighty-four percent of the carts were seen to be 'logical'. This result shows that for the overwhelming majority of shoppers the dilemma has been taken into account and solved. Of course, it does not tell us how consumers found the solution – they may either have endlessly rearranged the content of the cart and/or planned the order of the visit according to the size, weight and fragility of the items they were looking for. Observations, focus groups, and the 'water packs' observatoire, however, show that in many cases the second solution plays a great role (if only 11 percent of the clusters began their shopping tour at the water aisle, 73 percent had obviously set aside a space in the cart for the packs of bottled water).

The planning of purchases is further evidenced with the use of additional shopping devices that the consumer him/herself provides. 20 percent of consumers equip their cart with diverse personal tools such as isotherm bags, cool boxes, wicker baskets, etc.⁹ However, the best clue for the planning of purchases stems from a result as discreet as unexpected: the content of cart locks. A priori, if what to put in a cart lock was of no importance to the shoppers, and/or if the problem of finding something to fill the locks emerged at the last second, the most obvious and probable solution would be to use a coin rather than a token. Indeed, coins are to be found in our own pockets, bags or wallets far more frequently than supermarket 'parallel monies' (Blanc, 2001; Zelizer, 1994). Of the 661 cart locks we discreetly observed at the cash registers, only 28 percent had coins. The remaining 72 percent had tokens. The predominant presence of tokens thus proves the extreme planning of purchase behaviour when using carts (with perhaps a secondary explanation in that the choice of a token represents a lesser damage in case of loss or theft of the cart?).¹⁰ Finally, the necessary complement of the shopping cart is often the shopping list. The cart means mass shopping, and mass shopping is better performed with a list, i.e. a powerful tool for the pre-planning of purchases. The shopping cart's purchasing capacity, as well as the list's planning ability, work together to relegate arithmetic preoccupations to a position of secondary importance, and to focus consumer attention on the matching between his/her intention and the supermarket's supply.



Figure 3

Brazil, Sao Paulo airport, duty free zone, 24 May 2004

From calculation to qualculation

Of course, the putting of calculation 'on hold' by the cart is not without exception. Somewhere in the world, one may find shopping carts directly equipped with calculators.

However, such shopping carts are not easy to come by. They are so rare that a deliberate search for them would no doubt prove unsuccessful; I came across them only by chance in Brazil, in the duty free zone of São Paulo airport (and I haven't encountered others anywhere ever since). From this point of view, the 'cart with calculator' is rather the exception that confirms the rule of the 'calculation being put on hold' prescribed by the huge majority of existing shopping carts. All the same, other less anecdotal and more sophisticated solutions recently emerged, for instance in Italian supermarkets.

The Italian supermarket chain *Coop Estense* recently adopted an American technological innovation (Symbol Technologies, Inc., The Enterprise Mobility Company™) which consists of equipping carts with removable scanner systems.¹¹ Thanks to this device, available only to the chain's cardholders, consumers are invited to scan one by one the barcodes of the items they choose. In so doing, they may not only check prices, but also obtain a display of the total amount of their purchases, and even indications of special offers. Once their shopping is over, the



Figure 4

Italy, Coop chain, 4 August 2003

consumers benefiting from this device proceed towards a special cash register. These privileged consumers are not obliged to have their products checked (although they are subject to random inspections in order to discourage fraud). As a consequence, they benefit from substantial gains in terms of time and physical effort. The system is supposed to increase customer loyalty and to reduce store costs. Curiously enough, however, the main argument which is used to promote the extension of this innovation is the time gain. Its commercial name is 'salva-tempo' [save time]. It would appear that it were preferable, from the chain's point of view, not to insist on the revolution that such a device obviously brings in terms of consumer's calculation.

However, if the 'salvatempo' device improves and makes the 'built-in calculator cart' we previously encountered more user-friendly, it underlines the important 'calculative' deficiency of ordinary carts. The consumers who are obliged to push carts without calculative abilities are still not inactive however. On the contrary, they have long tried to compensate the lack of calculative supports by bringing along their own cognitive prosthesis: shopping lists. But if calculators and scanners are 'calculative tools only', shopping lists are both 'calculation' and (above all) 'qualculation' equipments. They are instruments aimed at supporting not only economic rational choices, but also the delicate conversion between written anti-



Figure 5

Shopping list, Toulouse, 22 February 2003

pated shopping intentions and the qualitative supermarket supply, often beyond any consideration of price (Cochoy, 2002).

Even if the shopping list occasionally displays information about prices and quantities, it is a very poor 'pure calculation' instrument. In fact, the shopping list rather poses the problem of 'qualculation', that is, the very delicate evaluation of the best choice when calculation is not possible (Cochoy, 2002)¹² when the lack of explicitly quantified points of reference hinders the use of strict 'consumer arithmetic' (Lave et al., 1984). Indeed, the list faces us with a double uncertainty. The first is that of the sociologist, when he tries to decipher other people's lists. Lists leave us utterly perplexed because of their implicit and imprecise character. They show us calculative patterns which are at best highly 'indexed' and at worst not trustworthy: what does 'sugar' mean? A single box, or several? Hard or powdered sugar? Brown or white? Faced with such questions, the sociologist's perplexity merely reproduces that of the consumer, as soon as he/she is not the author of the script that someone else prepared for his/her shopping. Particular orders such as 'Nutella' or 'Bonjour' (a brand of powder breakfast beverage) in no way exclude less readable ones. If coded sentences like '*bon vin si tu n'en as pas*' [good wine if you don't have any] are understandable by the one who holds the list (and by him/her alone), they do not overcome his/her perplexity. Which wine best matches the writer's intentions? The second dilemma is not only connected to the incomplete contract of the list but also tied to the irresistible gap between the often



Figure 6

The cell-phone consumer, Toulouse, 29 September 2004

generic items of the list and the highly diverse supply on the shelves (Cochoy, 1999b). Sometimes, this double dilemma may only be solved thanks to the use of other equipment such as a cell-phone (see Figure 6). Thus it turns us towards the eminently collective character of many choice behaviours. Now, the unveiling of the collective dimension of consumption is largely supported by the shopping carts which, in transforming 'a' consumer into a 'cluster' (as an aggregate of consumers not reducible to the family), also transforms calculation and qualculation into a new form of economic cognition, which I propose to name 'calqulation'.

Calqulation

The shopping cart as clusters' vehicle

In the different pictures that I have analysed so far, there were not only articles. Above the calculator, there were a baby's legs and a mother's hand; on the list, there is an anonymous consumer's hand; beside, below and beyond the cell-phone, there is the father, of course, but also a baby (in the cart's seat) and probably a mother (at the other end of the phone line). A full examination of the pictures thus reveals that the shopping cart aggregates not only goods and equipments, but also people. This section proposes to show precisely that the shopping cart contributes to changing a single consumer into a collective cluster, and to analyse how such a shift modifies consumer cognition.

If we focus on a consumer group as a shopping unit, if we consider the shopping cart as a sign of such a unit, if we then examine a sample of consumers gathered around their respective carts in a non-biased situation (i.e. a situation where each

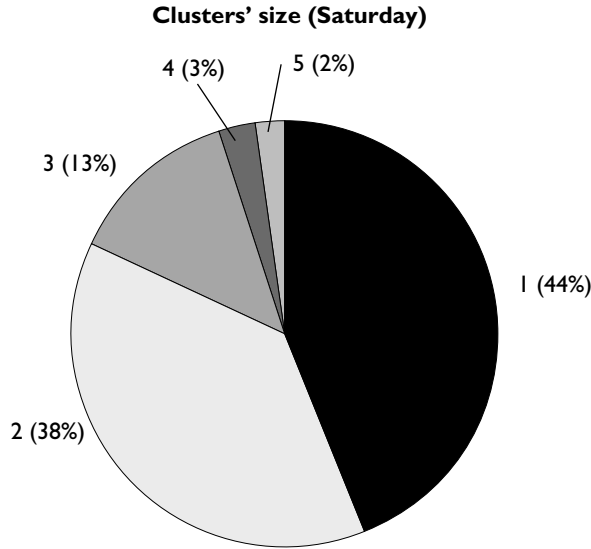


Figure 7

Clusters' size, from the observatoire 'empty clusters at the shop entrance'

cluster's member has an equal chance to access to the shopping scene or to stay at home, that is to say, a Saturday), we realize that in a large majority of cases the consumer attached to a cart is not single, but multiple: two persons or more in 56 percent of cases, against 44 percent of consumers 'shopping alone', to paraphrase Putman (2000)! Moreover, these 44 percent are not necessarily truly 'alone': as the cell-phone customer shows, they may (and are likely to) form a network of considerable size. Many of those who appear to 'shop alone', then, in fact do not.

Considering the collective character of consumption is, of course, far from original. Wroe Alderson long ago qualified the buyer as an 'organized behaviour system', which he proposed as the relevant unit of analysis in marketing (Alderson, 1958). Moreover, it would be an error to confine the latter notion to industrial marketing and collective entities such as buying centres. Indeed, consumer research has performed some interesting research into household decision making (Davis, 1976; Palan and Wilkes, 1997; Qualls, 1987); sequential choice in group settings (Ariely and Levav, 2000); the effect of crowds in mass consumption (Dion-Le Mee, 2000); the influence of social presence in a retail context (Argo et al., 2005); the role of guides in art museums (Debenedetti, 2003), etc. However, such works are rather exceptions. Most of the time, the Aldersonian conception of a collective consumer is forgotten in favour of empirical studies which mainly focus on individual shopping units.

Of course, a first examination of 'clustered' consumers seems to suggest that one may be right in confining the analysis to the isolated consumer. In a super-market at least, taking into account the behaviour of other people around a con-



Figure 8

Not 'face-to-face', but 'face to shelves'

sumer seems initially to have little relevance for understanding the latter's behaviour. People face in other directions. Supermarkets are one of the rare places where people look for 'objects' rather than for 'social' relationships (Cochoy, 2007a). This bent towards objects is all the more remarkable when the surrounding people are fairly numerous. In supermarkets, observation shows that each 'other' (and his/her shopping cart) is an obstacle on the route between the single consumer and the 'other things' he/she tries to grasp. Human beings and carts screen inter-objectivity (Latour, 1996): everyone slaloms between carts and bodies that hinder his/her progress; each one waits for the other's move so as to get to the shelves. Avoidance behaviour is the rule, and interaction the exception. The shopping cart of course plays a crucial role in this relative isolation of everybody around their selecting work. The filling up task isolates people rather like blinkers. It engages them in a dialogue first and foremost oriented towards things.

Closer observation however shows that the shopping cart also acts in the opposite way. Indeed, it favours the involvement of more than a person. To the group who push, it offers a reference point which helps them to gather and meet again after individual picking operations. To one, it offers storage space; to another, it provides an observation point over which to watch, and/or to rest one's elbows on the bar. To the children, it provides a playground as well as a rest place. To the parents, it provides a suitable seat for the transportation and watching of the kids. The cart therefore favours general non-interaction as well as the single colloquium of clusters' members. Of course, the latter speak to each other, but they do so side by side, turned towards products – 'face to shelves' rather than face to face.

Nevertheless, and beyond this very particular physical position of 'adjoining talk' (which has the great merit of introducing objects into social interactions), the deliberation of clusters matches with classical interaction: it leads each consumer to adjust his/her standpoint to the one of his/her partner. Clusters deliberate in order to build the best choice together (from a collective point of view). What is

at stake in such exchanges invites us to complete the models of calculation (i.e. a rational choice process mobilizing quantified elements) and qualculation (i.e. a rational choice process mobilizing qualified elements) with the one of calquation, with a 'Q'. With calquation, I mean 'calquer' (a French verb for tracing, copying a model) one's decision on that of one's partner(s), and vice versa (calquation thus designates a form of interactive deliberation). Talking about 'calquation' is thus a means to theorize about the collective aspect of consumer choice.

In order to better understand the process at hand, let's further explore the 'calque' [tracing paper] metaphor. In the action of tracing, there is not only the idea of copying, but also that of adjustment. Using tracing paper requires a double aptitude: the purpose is not only to 'trace again' the lines of the original copy, but also to adjust the translucent paper to the model. Let's now imagine that such a pattern may be reciprocal, as if two people with their respective tracing papers met on either side of a window pane, the one trying to adjust/trace the drawing of the other, without having drawn anything at the onset and without knowing who holds the original. This hypothetical scene helps us to understand what 'calquation' is all about. This term designates the building of a shared project, but also the activation of a collective rationality, which functions less as a distributed cognition or as an average rationality than as a 'doubled' or 'adjusting' rationality. Calquating means anticipating, measuring, testing, influencing and correcting the discrepancies between one's position and that of one's partner, and the other way around. In other words, Calquation is more related to the verb 'calquer' (i.e. the effort to adjust one's action to a given model) than to the noun 'calque' (i.e. the result of such an action when it is one way and successful, thus producing a faithful copy). Indeed, in the 'calquation' schemes I observe, the position of the copied and the copier are unclear and not exclusive. Calquation is more an intention than a result. As a consequence, the outcome of the calquating effort may not be known in advance: being collective, interactive and reciprocal, the adjustment may lead to some unexpected 'drawings': if mimetism is engaged, of course, most of the time it does not work as the passive copy of a preset and stable model but as a form of 'creative mimetism' (see examples below).¹³ Moreover it may even fail. Some people prefer reflexive 'calquation' (that is, to keep their own counsel or to make their own minds up)¹⁴ to adjusting to the other's view.¹⁵

To study how consumers 'calculate' is thus to observe how and why this fragile convergence goal is carried over or not. In the supermarket, 'calquation' takes on two major forms: on the one hand, calquation first and foremost calls for the private deliberations of the cluster's members; on the other hand, it also engages – even if more discretely and loosely – the exchanged looks between the different clusters circulating in the general space of the supermarket. Of course, calquation is a pervasive activity which is not restricted to shopping cart use. But it is my claim that shopping carts made a decisive contribution to the development of calquation, especially as far as children are concerned, since they 'give a seat' (both practically and politically) to children in the commercial arena (Cochoy and Grandclément, 2005). Thus shopping carts are particularly appropriate to study the collective dimension of consumers' behaviour.



How cluster members calqulate

The calculation of the members of one cluster has two aspects: a ‘talking calculation’ which is traceable through explicit deliberations and a ‘mute calculation’, which appears through a tacit adjustment and sharing out of places, roles, gestures and behaviours between the cluster’s members.

Talking calculation The explicit talking calculation implies cross-deliberations between the cluster’s members on prices and qualities. Calculating is a quantity surveyor’s job. Sometimes, it goes very fast, with a division of cognitive labour where the logic upon which members calqulate is well adjusted to their respective positions. Both agree on the price, possibly on their age or sex roles, and the combination of their efforts helps them to reach a common identification of the best offer under a qualculation constraint aiming at taking qualitative differences into account:

A young couple. The Woman (W26) pushes the shopping cart during all the shopping while the man (M28) contents himself with following her or staying close to the cart.

W26: Go fetch the Bolognese sauce please!

M28: Which one should I take?

W26: Just take Buitoni.

M28: Where is it?

W26: In this department there (she points to the department with her finger).

M28: OK.

But, most of the time, things are far more complicated, as interactions between children and adults often demonstrate. In such cases, the ways to select objects function along radically different modes (the child reasons ‘toy included’; the parents think ‘budget excluded’):

A 30-year-old man (M30) with a 3-year-old girl (G3) are standing in the beverage aisle in front of the packages of single-serving juice packs (orange juice in this case).

M30: Which ones do you want?

G3: (pointing to a brand) I want those! (G3 moves in closer and examines the packaging.) Or those over there, with the sun on them . . . (She points to another brand while her father pulls back slightly, checks prices, and selects a particular brand.)

M30: And these – don’t you like these?

G3: No!

M30: (showing her another brand) How about these, with the straw?

G3: Oh, yes! (He grabs the pack and hands it to her; she gets hold of it and, with some difficulty, tumbles it into the cart.) Look, Daddy, the straws! Straws are good. (She presses her finger against the straws underneath the protective product packaging.)

This case sums up all the issues at stake with calculation and its variants: what the young girl and her father say in fact is ‘I calculate, you qualculate, we calqulate’. ‘I calculate’, the father thinks, basing his choice first and foremost (though he does not say so) on the criterion of price. ‘But you qualculate’, he says in thought to his daughter, understanding the source of her objections. Indeed, what she is saying is,

'I'm no fool, I can take my own interest into account. It's just that I don't know much about prices yet; I don't even know how to read! What interests me is what I can see, the qualitative appearance of the product, the pretty sun on the package, for example'. The 'qual' base emphasizes non-monetary aspects of choice. Father and daughter then seek to adjust their respective rationalities to each other, telling us, 'We calquilate': they revise their respective positions, adjust them to each other, adopt and adapt their distinct points of view, each trying to *calquer* his or her position on the other's. The 'calquilation' is mutual, and the compromise obtained is imperfect and fragile; it hangs by a straw.

Neither the guiding principles which may lead the negotiation nor its outcome are certain. If the choice of juice packs finds a happy ending (as satisfactory for the partners), other situations lead to aborted choices, or to a 'violent' exit of calquilation through the affirmation of one's authority:

A couple in their thirties. The woman (W30) pushes the shopping cart; a child is sitting in it. The man (M30) shows his wife a big beer bottle, a special model for Christmas celebrations. The woman looks at the bottle without saying anything and carries on her way. The man does not react. The same couple then move along wine boxes:

M30: Did you see? (Showing her a wine box.)

W30: Have you seen the price: 30 euros!

M30: 30 euros, yeah . . . Do we take one?

W30: Me I don't know, it's you who . . . (She starts going away.)

M30: So?

W30: But, take the one at 13 euros 50. Saint-Émilion is good.

The man effectively takes the box at 13.50 euros.

Mute calquilation In the process (and study) of calquilating, it looks as if the actors (and I) forgot the cart. At first glance, calquilation looks like a pure/classical social interaction, as if it relied exclusively on intentional human beings, on the exchange of meaning, on speech, independently from objects. Of course, all shopping interactions are oriented towards objects: Bolognese sauce, juice packs, beer, wine, or any other goods. But each time these goods are outside the cart; it seems as if the cart played no role in the relevant scene. However, a closer look at the quoted dialogues shows that the cart is always there, from start to end, and that it plays in fact a crucial role in the interaction.

First, the shopping cart frames the very objective of calquilation. All the questions which start consumers' calquilation ('Go fetch the Bolognese sauce please!' 'Which ones do you want?' 'Did you see?') can be reduced to the same implicit collective problem: 'Will we agree to put it in the cart or not?' The cart also always closes the scene. The most striking result of our repeated observations is that putting the discussed object into the cart always closes the verbal exchange, like the auctioneer's hammer in an auction. In between the beginning and the end, the cart is less present, but it still plays a role. In all cases, it frames a 'picking zone', in the very same way a flashlight in the dark traces a temporary limit between an accessible world to actors and another that does not (yet/anymore) exist for them. In other words, the shopping cart has the ability to frame a



‘moving calquative space’, as Callon and Muniesa (2005) would certainly say! Even if the ‘picking/talking zone’ circumscribed by a cart is much more flexible than the fixed angle and length of a flashlight’s beam, observation shows that people rarely go very far away from their cart. It is as if they were attached to it by some invisible elastic cord. This property, which is always latent, is actively used in my latter example as a way to avoid explicit calculation. The woman and the man engage themselves in mute calculation, which paradoxically gives voice to the cart itself: the man shows a bottle, the woman keeps walking. Pushing the shopping cart elsewhere appears as a way of conspicuously denying the relevance of the calquative space indicated by her partner, and to replace it with another ‘further’ possible ‘calquating/picking zone’. Of course, the cart’s sign language is fragile. If it works once, the man resists the second time: when the woman starts going away again with the cart, she gets a ‘So?’ as an objection to her move. And this objection reopens a standard calculation. However, if the shopping cart’s ability to frame human calculation may be loose with adults, it is far more efficient with children. When they are placed inside the cart, moving the latter elsewhere is a very powerful way to physically escape the discussion with them.

How different clusters calculate for themselves but also between clusters

Figures of mute calculation, however, find their full expression not between cluster members, but between clusters themselves, when anonymity rarefies speech, but not certain forms of discrete and silent interaction. The idea of an interaction between different clusters at first sight seems irrelevant. As we already mentioned, in supermarkets, people look at shelves rather than at carts and faces, and they worry more about their own goals than about the other carts and people surrounding them. Closer observation, however, shows that things are not so simple.

First, even when a consumer shops alone and concentrates only on his own goal, the cart favours a kind of ‘self-calculation’ of its pusher. Thanks to the transparency of the device, the pusher can identify the content of his/her cart, and, inversely, the cart tells him/her what he/she got and who he is. Each cart thus functions for its pusher both as a sandglass and as a mirror. As a sandglass, it provides its pusher with a rough visual measure of the progression of his/her choices. As a mirror, it expresses his properties, in both meanings of the term, i.e. personal characteristics and belongings. Overall, sandglass and mirror effects combine to favour the continuous adjustment (or calculation) between one’s belongings and personal characteristics.

Second, thanks to the openness of carts, clusters are not as indifferent to each other as we may first have thought:

Researcher: Do you sometimes look at the content of the carts?

Raymonde: No, me not really. I’m not interested in it . . . no.

Antonin: No.

Jacqueline: Personally, I’m interested when we quite simply wait to pay.

All together: Yes, that’s it.



Jacqueline: The one who is in front, the one who's behind: 'Oh look, he took that, you forgot it. Next time you'll have to remember it.'

Researcher: It makes you think about what you forgot . . .

All together (laughing): Yes!

Raymonde: But always when we get to the cash register.

Jacqueline: And so it's too late! (Laughing.)

Raymonde: So it is. My impression is, if there is a man, for instance, I think: 'That's an unmarried man's shopping, you see?' (All laughing.) I look at what they take, it's fun, you know.

Researcher: You can spot if he is unmarried, if he . . .

Raymonde: They take a lot of bread, they take . . .

Georgette: Or the one who takes a lot of wine, whisky and only that. It's horrible in that case!

Raymonde: Yes, that's a good topic for sociologists, really!

Jacqueline: Or the one who takes . . .

Georgette: So when it's a woman it's even worse! It has a strange effect . . .

Jacqueline: Well, so: listen, I'll send you to the supermarket! (Laughing.) You take only whisky bottles and . . .

Georgette: No, you don't go alone but with your husband. But here it's not the same. It's not the same. It's open for everyone to see . . .

Jacqueline: For the club I belong to, I came with a shopping cart full of wine (laughing). In fact we are observed. I can tell you we are observed. There are even people who ask us . . .

Researcher: Oh yes?

Jacqueline: Yes. So we start saying: 'Give me a subtotal because we are buying things for a club.' And so people next to you, they lean forward and they say . . .

Claude: 'That's better' . . .

Jacqueline: Yes, 'We were, we were wondering if . . . (Laughing.) So, phew!

Researcher: So you prefer to say it?

Jacqueline: Well, we have to tell the checkout person. But we start saying: 'Put it at the front, hey?' He answers: 'You know, it's for the club, the bottles, you put them at the front.'

Researcher: You try to put them in the bottom, to hide them . . .

Jacqueline: Oh no, no, no, no, no. Shit, hey! We don't care. But well, I'm still surprised when for instance we look at someone who has twenty or thirty boxes of the same thing. That always strikes me . . . It's something I can't figure out (laughing). Is it a pizza maker? Or is it a second hand dealer of some small . . .

All together: Yes, maybe!

(Focus group, Elderly people)

What is striking in this excerpt is the ordering of speech.¹⁶ At the beginning, it looks as if the hypothesis of 'looking across' between different clusters was collectively and firmly disproved ('No, me not really [. . .] no'; 'No'). But as soon as one dares go beyond mere denial, mouths open wide. People start talking and talking, exposing with great detail and pleasure all the aspects and secrets of clusters' voyeurism. Of course, the collective confession starts cautiously. First, people restrict the occurrence of such behaviour to the cash register, as if they were looking for an implicit excuse. Isn't the cash register a place devoted to product 'exhibition and inspection' anyway, and a place where the long station of different clusters makes 'looking across' almost inevitable? The cash register is a place where everybody's eyes can but flit everywhere, while bodies have to remain still. Second, if people admit they look at the others' carts, they pretend to concentrate on objects rather than on people and, through these objects, on their own interests



rather than those of others ('Oh look, he took that, you forgot it; next time you'll have to remember it.'). But once again, as soon as a focus group member moves a little bit further, tongues loosen again, and it becomes quite impossible to make them stop (I arbitrarily cut the transcription before its end!). We then discover the remarkable aptitude of people to develop a true 'cartscopy', i.e. to deduce some sociological profiles from the observation of others' carts. From clichés about unmarried men to suspicion about possible alcoholism and illegal work, guesses, gossips and other 'calculations' go on and on; everybody bids higher than the neighbour, lays it on, until we are submerged with social violence, normativity and intolerance which hide behind the anonymous, basic and innocent uses of shopping carts.

Apparently, and up to now, calculation between different clusters is limited to the cash register, and it works one way only: if a first cluster observes a second one, the second cluster may observe a third, but none minds being observed ('Researcher: You try to put them in the bottom, to hide them . . . Jacqueline: Oh no, no, no, no, no. Shit, hey! We don't care.'). This sounds logical. There is more opportunity for people to observe each other when they get closer, immobile, and spend more time together. Similarly, they are more likely to act so without reciprocity, since in the queue at the cash register everybody is behind someone. But even if limited and partial, the 'looking across' phenomenon at the cash register leads us to wonder if such a process may not play a role elsewhere, even if more loosely but also more symmetrically.

A first clue showing that clusters also 'calculate' their respective positions in the supermarket aisles emerges when people are confronted with exceptional carts, for instance the 'overloaded' cart I already used as an illustration in the first part of this paper. This picture leads people to indirectly admit they have a visual knowledge of the others' carts, but also to convoke the hidden norms which frame their judgement and behaviour:

Researcher: Do you often see such overloaded carts?

All together: Yes, we do.

Claude: Organized like that no, not much. In general it's better organized.

Jacqueline: Yes, because we want to put the maximum so we (square gestures), we tidy up.

Claude: Completely full, yes, but badly organized like that, well . . .

Jacqueline: So it depends also on one's temperament. It's true that we don't see many like that, arranged just anyhow . . .

Researcher: Do you imagine pushing such a cart?

Jacqueline: Oh, me no.

Raymonde: Oh no, hey? Me neither.

(Focus group, elderly people)

Researcher: What do you think of this cart?

Alexandre, laughing: It's a goddamned chaos!

René: It will cost a lot of money.

George: That's the week-end, I think. That's one month's shopping (the others agree).

René: But it's badly organized. You should put bottles of water underneath . . .

Romain: But look, it already has bottles of water underneath; there's no space anymore. Oh yes, but you take care in putting the bottles in the bottom.

René: Yes, what I personally do is put all the water bottles in the bottom, and then fruit on top. Well it's logical, isn't it? [. . .]

Stéphane: In my opinion if she had better organized her cart she could put much more into it.

Alexandre: That's it, it's what I said, yeah, if you tidy up you don't . . .

George: It's someone who does her shopping but who probably went back and forth because shops are organized in a certain way, and here you see the water in the middle, I really picture the fresh food in the middle, so it's someone who probably, who did not follow the super-market's logic.

René: It's because it's a woman. (All laughing.)

(Focus group, men, same picture)

Researcher: What do you think of this cart? (All laughing.)

Farida: The packing is not strategic at all! (All laughing.) But nevertheless some water bottles are underneath, there's this place underneath where we can add things, be it 25 litres of soil-based compost, or six packs of milk.

Fred: It's badly organized.

Hughette: It's a little bit messy, isn't it?

Fred: Here, it's panic!

Hughette: Items are taken all along the journey and hop, hop!

Researcher: Do you imagine pushing such a cart?

Flavie: No, I would be afraid that everything would fall off. The water bottles.

Leslie: Oh yeah.

Hughette: It's poorly balanced.

Fred: Moreover I guess the vegetables will . . .

Evelyne: There are eggs at the bottom . . .

Hughette: Or fish! We'll find it again!

Evelyne: Or fruit. There, ready-made 'compote'!

(Focus group, women, same picture)

The discussions above show that all people (be they male or female, young or old) have a 'calculated' knowledge of the others' carts. But they still don't tell if people take into account, for themselves, the social norms they use when looking at them. Is self-service shopping a totally 'free' behaviour? Does the supermarket's anonymity make everything possible, leading shoppers to behave as they like, without caring about what others think? Or does the openness and transparency of carts affect the behaviour of clusters, as if one's shopping took the others' possibly intrusive eyes into account? The answer is delicate. As I already mentioned, general observations as well as focus groups show that anonymity and free 'selfish' behaviour dominate. However, some other clues indicate that this domination is far from being absolute. First, when trying to listen to clusters' internal deliberations, I noted how difficult it was. When approaching people, voices lowered, bodies moved, as if the shopping experience, in spite of its anonymity, triviality and public character, engaged some privacy that should not be infringed. Second, throughout the research we got some testimonies indicating that some (few?) people 'calculate' their shopping behaviour according to what other people may see and think about their carts. For instance, a young professor recognized that



she was always ‘burying’ toilet paper under other products for fear of ‘meeting students’. Of course, such confessions are rare. But do not other people practise unconsciously what a few of them admit doing on purpose?

Discussion

This research suggests that clusters calculate each other as well as they calculate internally, even if in the former case the process at stake is less explicit, conscious, recurrent and powerful than in the latter. The ‘calculation’ neologism is aimed at underlining that economic action remains socially embedded even when price and quality differences do not matter and when social networks are missing or remote. The openness and transparency of shopping carts encourage people, while they are shopping, to take into account their ‘shelf neighbours’ (and the other way around), even if it is from time to time and to a very small degree. Calculating is thus a fragile but central process of the common world that each shopper belongs to and contributes to build all together. It is both a very loose and highly pervasive form of economic cognition which is part of marketing atmospherics (Grandclément, 2004) but also of the ‘atmosphere of democracy’; calculating clusters contribute to define an elusive whole which reminds Walter Lippman’s phantom public, to take one of Latour’s favourite references (Latour, 2005b). It tells us that choices are always thought, shaped, and collectively debated through the invisible vibration of the exchanging people and things, in the market arena as well as in the political realm.

Of course, such a vibration is difficult to grasp and describe precisely: the pervasiveness of calculated exchanges is only matched by their elusiveness. Even if my colleagues and I tried to do our best to gather a few traces of the social interactions which develop around shopping carts, further research would surely be needed to measure their extension and intensity, to know whether they are connected or not to special groups, to determine if they vary along different organizational or cultural contexts, or to study why and how market professionals shape or not such choice configurations. Since the calculation phenomenon seems to be part of the invisible interactions neurosciences are currently investigating, its study could possibly benefit from the tools and insights currently developed in neuro-economics and neuro-marketing (Lee et al., 2007). However, as a sociologist, I do not have the expertise to assess the relevance and promises of such a research effort. As a consequence, the only thing that I can propose, to contribute myself to a better understanding of calculation, is to extend the quantitative ethnography of choices to other situations. In order to move in that direction, I have just studied, during the 2007 French presidential elections, how people take bulletins before hiding themselves in the voting booth (do they choose silently, collectively, conspicuously, etc.?) My hypothesis is that a symmetrical anthropology of consumer and voter choices is one of the best means of highlighting the collective and public aspects of choices that we tend to consider as only singular and private.

Conclusion

What are the implications of the shopping cart fieldwork and the calculation framework for consumer sciences? I hope that my little shopping journey confirms at least the hypothesis from which I started in the introduction: i.e. the shopping cart is not only a good vehicle to circulate among supermarket shelves but also among research programs on consumption (such as consumer research, Miller's anthropology of shopping, or Callon's sociology of calculation). To consumer research I took the approach and method of naturalistic inquiry; from Miller, I kept the affective and collective dimensions of shopping as the driving forces behind what I call calculation; from Callon, I borrowed the hypothesis that consumer behaviour still is (without necessarily contradicting cultural studies) a matter of down-to-earth calculation. As such, it should thus be taken seriously and studied in depth/in situ, rather than abandoned to economists or cognitive psychologists. This may be summarized with a single synthetic/concluding formula: 'shopping cart use is an affair of love *and* calculation in naturalistic settings'. The calculation-qualculation-calculation triad involved in shopping cart's use helps to connect the 'cold', 'rational' aspects of consumer choice (calculation) to the properties of their 'mundane', 'material' settings (qualculation) and 'social', 'warm' environment (calculation).

I hope that the study I proposed, even if compatible with other approaches, does not only reproduce their previous results, but may contribute to identifying some new insights and research avenues. The contribution I would like to stress is modest but positive and optimistic: despite the enormous existing body of literature, researchers interested in consumer research still have many fields to explore and theoretical challenges to handle. In their impressive review of consumer sciences, Woodruffe-Burton et al. (2002) concluded that the literature on consumer behaviour covers 'hedonic shopping', 'impulse purchasing', 'compulsive consumption', 'addictive consumption', 'compensatory consumption', 'recreational shopping' and 'self-gift giving'. Similarly, in their imposing survey of 'twenty years of research' in 'consumer culture theory', Eric J. Arnould and Craig J. Thompson (2005) described the field as focused on four major interrelated research domains: 'consumer identity', 'marketplace cultures', 'socio-historical patterning of consumption' (i.e. issues of social class, gender, ethnicity . . .) and 'mass-mediated marketplace ideologies and consumers' interpretive strategies'. It is interesting to note that these two lists (which their respective authors implicitly wish to be exhaustive) include neither 'ordinary shopping', i.e. shopping activities aimed at basic home supplying (for the former), nor 'consumer tools' or 'consumer physical behaviour' (for the latter).

Of course, Woodruffe-Burton and her colleagues point out that consumer research is also about 'the shopping environment' and quote many studies which focus on 'shopping places' and 'shopping spaces', such as department stores (Nava, 1996), shopping malls (Thrift, 1997) and electronic shopping (Rosenberg and Hirschman, 1980).¹⁷ But this effort towards materiality should be extended further: one should study not only 'fixed' and 'large' environments like 'fantasy



palaces' (shopping malls and department stores) but also 'tiny' and 'removable' devices like shopping carts, of course, and any other trivial 'market-thing' that plays a role in the commercial arena (Cochoy, 2004, 2007a, 2007b).¹⁸ As a consequence, one should not only focus on 'meaning' (the 'hermeneutic' or 'cultural' dimensions of persons and things), but also on 'action' (what the same people and things make and shape, or help us to shape and make) (Latour, 2005a). In other words, the mundane, down-to-earth, rational, functional, material and calculative aspects of consumption deserve as much attention from consumer sciences as their intellectual, ritual, cultural or anthropological counterparts. All consumption aspects and entities belong to consumer phenomena and studies; they thus have to be reunited rather than separated. For every researcher involved in the field, this should be an opportunity to be taken, rather than a point to discuss. Consumer research is a rich field where a lot remains to be done. There will never be sufficient perspective and effort to carry out the work that has to be accomplished, each one being useful for the others.

Notes

- 1 For a sociological account of the *Consumer Behavior Odyssey* (a collective project aimed at studying consumer behaviour in natural settings), and more generally for an extensive history of the disciplines of marketing and consumer research in the twentieth century, see Cochoy, 1998, 1999a. The *Odyssey* (Belk et al., 1989) was of course preceded by some other pioneering (even if less spectacular) contributions, such as Levy (1981) and Holbrook and Hirschman (1982).
- 2 I am indebted to Catherine Grandclément for the writing of this paper: our previous work and discussions on the techno-anthropology of shopping carts irrigate it. I am also very grateful to the students of the applied sociology Masters course (University of Toulouse II, France) who collected the data on which this particular piece of research rests, and to Sandrine Barrey and David Martin who helped me to supervise their work. I thank the Maison des Sciences de l'Homme de Toulouse who financed the research. Finally, I warmly thank Barbara Czarniawska, Hans Kjellberg, Christian Licoppe, Alexandre Mallard and the three anonymous reviewers of *Marketing Theory* for their very helpful comments on earlier drafts of this paper. Of course, the arguments I develop here engage nobody other than myself.
- 3 My hypothesis is that a device that apparently intervenes alongside or after choice has been made may paradoxically subsequently shape the same choices. The purpose of the present paper is precisely to back up this hypothesis.
- 4 The shopping cart occurs in a suggestive footnote (see below, p. 12) of the French original version of a paper (Callon and Muniesa, 2003) later published in English (Callon and Muniesa, 2005). In this latter version, however, this footnote has disappeared.
- 5 Such a process may explain why market shaping does not – as the theoretical framework on the performativity of markets puts it (Araujo, 2004) – produce stabilized markets.
- 6 I thank Hans Kjellberg for suggesting these remarks and the play on words.
- 7 One may argue that 'mass purchase' is more a consequence of large stores than the effect of shopping carts, the latter being just a logical outcome of the 'mass shopping'

logic. But this would be to forget that mass retailing is itself deeply indebted to the shopping cart innovation which helped consumers to buy and travel more than before (Grandclément, 2006).

- 8 We classified as 'logical' a cart where the fragile items (eggs, fruits, vegetables, soft packages, etc.) were on top and the hard/heavy items (bottles, milk packs, etc.) at the bottom. 'Illogical' shopping carts were where at least one fragile item was obviously endangered by the overall layout of products in the cart.
- 9 Source: 'empty clusters at the shop entrance'.
- 10 Source: observatoire 'clusters at the cash register'.
- 11 http://www.symbol.com/news/pressreleases/pss_helps_customers_in_italy.html (consulted 26 January 2008).
- 12 When I first proposed this notion of qualculation, it was to deal with the hegemony of the 'Buridan's donkey' choice situation in market settings. In contemporary markets, consumers are often asked to choose between competing products that they find difficult to distinguish apart from price considerations (Coke versus Pepsi, Nike versus Reebok, Canon versus Nikon, etc.). In order to overcome such difficulties, market professionals as well as consumers build/use evaluation devices and processes based on product qualities. This notion was later used by other authors to insist on the qualitative and technological aspects of market shaping (Callon and Law, 2005) or even to describe the more general process through which ideas are framed and channelled (Thrift, 2004).
- 13 This notion echoes Girard's work on the mimetic character of desire (Girard, 1965). Girard's idea is that we borrow our desires from others. According to him, our desire of objects is not autonomous, but rather mediated by the desire of another person – called 'the model' in Girard's framework – for this very same object (for instance, a novel's hero is moved by the desire to be a certain person and to act in a certain way). In other words, the relationship between the subject and the object is not direct but rather triangular: it articulates the desiring subject, the desired object and the model who works as a 'mediator.' However, in my field such a process is far from being necessary: actors rather seemed to be free to play or not the game of mimetic desire.
- 14 For an excellent sociology of such a process, see Dubuisson-Quellier (2006).
- 15 They may even prefer 'forced clandestine agreements', for instance when kids discreetly put something in the cart without their parents' knowledge (Underhill, 1999).
- 16 I cannot reproduce all excerpts but it is important to note that all three focus groups experienced the situation of 'looking across' at the cash register and then unveiled their behaviour with the same sequence and results.
- 17 Here, one may (should?) also quote some excellent European studies like Badot (2005); Dubuisson-Quellier (2006); Grandclément (2004); Kjellberg (2007); Pia Pozzato (2001), etc.
- 18 See some British inputs to consumer research – for instance Du Gay (2004) and McFall (2004) – historical accounts of (respectively) self-service arrangements and material forms of advertising, and Shove's studies on the consumption of freezers (Shove, 2000), showers (Shove, 2003), walking sticks (Shove and Pantzar, 2005), etc.; see also Callon et al.'s (2007) book on 'market devices'.



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Franck Cochoy is Professor of Sociology at the Université de Toulouse II and member of the CERTOP-CNRS. His work in the sociology of markets focuses on the different mediations that frame the relation between supply and demand, such as packaging, marketing and standardization, etc. He is the author of *Une histoire du marketing* (La Découverte, 1999) and *Une sociologie du packaging ou l'âne de Buridan face au marché* (Presses Universitaires de France, 2002), and the editor of *La captation des publics* (Presses Universitaires du Mirail, 2004).

Address: CERTOP, Maison de la Recherche, 5 allées Antonio Machado, 31058 Toulouse Cedex, France.

[email: cochoy@univ-tlse2.fr]