

**ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL OF SCIENCE**  
**ENGINEERING AND TECHNOLOGY**

**AUTOMOBILE PERSONALIZATION STRATEGIES OF AFTERMARKET  
MODIFICATION AND MASS CUSTOMIZATION**

**M.Sc. THESIS**

**Ekin BİROL**

**Department of Industrial Product Design**

**Industrial Product Design Programme**

**FEBRUARY 2012**



**ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL OF SCIENCE**  
**ENGINEERING AND TECHNOLOGY**

**AUTOMOBILE PERSONALIZATION STRATEGIES OF AFTERMARKET  
MODIFICATION AND MASS CUSTOMIZATION**

**M.Sc. THESIS**

**Ekin BİROL**  
**(502091918)**

**Department of Industrial Product Design**

**Industrial Product Design Programme**

**Thesis Advisor: Assoc.Prof.Dr. H. Hümanur BAĞLI**

**FEBRUARY 2012**



**İSTANBUL TEKNİK ÜNİVERSİTESİ ★ FEN BİLİMLERİ ENSTİTÜSÜ**

**OTOMOBİL KİŞİSELLEŞTİRME STRATEJİLERİ OLARAK MODİFİYE VE  
KİTLE ÖZELLEŞTİRMESİ**

**YÜKSEK LİSANS TEZİ**

**Ekin BİROL  
(502091918)**

**Endüstri Ürünleri Tasarımı Anabilim Dalı**

**Endüstri Ürünleri Tasarımı Yüksek Lisans Programı**

**Tez Danışmanı: Öğr.Gör. Dr. H. Humanur BAĞLI**

**ŞUBAT 2012**



## TABLE OF CONTENTS

	<u>Page</u>
<b>TABLE OF CONTENTS</b> .....	<b>v</b>
<b>ABBREVIATIONS</b> .....	<b>vii</b>
<b>LIST OF TABLES</b> .....	<b>ix</b>
<b>LIST OF FIGURES</b> .....	<b>xi</b>
<b>SUMMARY</b> .....	<b>xiii</b>
<b>ÖZET</b> .....	<b>xv</b>
<b>1. INTRODUCTION</b> .....	<b>1</b>
<b>2. CULTURAL AND METHODOLOGICAL ASPECTS OF AUTOMOBILE PERSONALIZATION AND CATEGORIZATION</b> .....	<b>3</b>
2.1 Brief History of Custom Made and Modified Automobiles.....	3
2.2 Material Culture and Aftermarket Automobile Modification .....	7
2.2.1 Automobiles as conspicuous consumption goods.....	8
2.2.2 Automobiles and commodity fetish .....	11
2.3 A model of product personalization .....	21
<b>3. MASS CUSTOMIZATION, DESIGN AND MARKETING</b> .....	<b>27</b>
3.1 Definitions and Literature.....	27
3.2 Examples .....	30
<b>4. RESEARCH</b> .....	<b>39</b>
4.1 Ethnographic Research.....	39
4.2 Survey.....	46
<b>5. DISCUSSIONS</b> .....	<b>57</b>
<b>REFERENCES</b> .....	<b>65</b>
<b>APPENDICES</b> .....	<b>69</b>
APPENDIX A.1 .....	70
<b>CURRICULUM VITAE</b> .....	<b>71</b>



## **ABBREVIATIONS**

**MC** : Mass Customization



## LIST OF TABLES

	<u>Page</u>
<b>Table 5.1</b> : Personalization dimensions chart for both MC and aftermarket modification. ....	63



## LIST OF FIGURES

	<u>Page</u>
<b>Figure 2.1</b> : 2008 Bentley Continental GT.....	4
<b>Figure 2.2</b> : 2008 Zagato Bentley Continental GTZ.....	4
<b>Figure 2.3</b> : Audi Ad no.1 .....	11
<b>Figure 2.4</b> : Audi Ad no.2 .....	11
<b>Figure 2.5</b> : 1975 Volkswagen Golf MK1 GTI Engine .....	13
<b>Figure 2.6</b> : 1986 Volkswagen Golf MK2 GTI Engine .....	14
<b>Figure 2.7</b> : 1993 Volkswagen Golf MK3 GTI Engine .....	13
<b>Figure 2.8</b> : 2001 Volkswagen Golf MK4 GTI Engine .....	15
<b>Figure 2.9</b> : 2004 Volkswagen Golf MK5 GTI Engine .....	15
<b>Figure 2.10</b> : 2009 Volkswagen Golf MK6 GTI Engine .....	16
<b>Figure 2.11</b> : 15" RS4 Wheels.....	17
<b>Figure 2.12</b> : Toyota Hubcaps.....	18
<b>Figure 2.13</b> : Mugge, Schoormans, Hendrik and Schifferstein’s example of a product that requires high mental effort for personalization .....	23
<b>Figure 2.14</b> : Garland, a lamp made out of etched metal .....	24
<b>Figure 2.15</b> : Modular shelving system made out of reclaimed furniture and wood .....	25
<b>Figure 2.16</b> : Do Scratch, a lighting armature with a black coating.....	26
<b>Figure 3.1</b> : Fiat 500 internet advertisement.....	30
<b>Figure 3.2</b> : Fiat 500 Configurator 1 .....	31
<b>Figure 3.3</b> : Fiat 500 Configurator 2 .....	31
<b>Figure 3.4</b> : Mini Configurator 1.....	32
<b>Figure 3.5</b> : Fiat 500 Configurator 3 .....	33
<b>Figure 3.6</b> : Fiat 500 Configurator 4 .....	34
<b>Figure 3.7</b> : Fiat 500 Configurator 5 .....	34
<b>Figure 3.8</b> : Fiat 500 Configurator 6 .....	35
<b>Figure 3.9</b> : Fiat 500 Configurator 7 .....	36
<b>Figure 3.10</b> : Mini Configurator 2.....	36
<b>Figure 3.11</b> : Mini Configurator 3.....	37
<b>Figure 3.12</b> : Mini Configurator 4.....	37
<b>Figure 3.13</b> : Mini Configurator 5.....	38
<b>Figure 4.1</b> : Workflow of the Research.....	38
<b>Figure 4.2</b> : Modified, 1998 Peugeot 106 Gti .....	39
<b>Figure 4.3</b> : Modified, Citroen Saxo VTS and Peugeot 106 Gti.....	40
<b>Figure 4.4</b> : Modified, Peugeot 106 Gti .....	40
<b>Figure 4.5</b> : 1998 Stock Opel Vectra B.....	41
<b>Figure 4.6</b> : 1998 Modified Opel Vectra B .....	42
<b>Figure 4.7</b> : 1998 Stock Opel Vectra B.....	42
<b>Figure 4.8</b> : 1998 Modified Opel Vectra B .....	43
<b>Figure 4.9</b> : BMW Team 2011-09-25 Bahcesehir Golet Meeting 1 .....	44
<b>Figure 4.10</b> : BMW Team 2011-09-25 Bahcesehir Golet Meeting 2 .....	45

<b>Figure 4.11</b> : How can you define the level of involvement of yourself with your vehicle? - Modified Automobile Users.....	46
<b>Figure 4.12</b> : How can you define the level of involvement of yourself wity our vehicle? – MC Automobile Users.....	46
<b>Figure 4.13</b> : Do you repair things at home? - Modified Automobile Users. ....	47
<b>Figure 4.14</b> : Do you repair things at home? - MC Automobile Users.....	48
<b>Figure 4.15</b> : How would you define your driving? - Modified Automobile Users .	48
<b>Figure 4.16</b> : How would you define your driving? - MC Automobile Users.....	49
<b>Figure 4.17</b> : To what exten.d do you think you and your car are alike? - Modified Automobile Users.....	50
<b>Figure 4.18</b> : To what extend do you think you and your car are alike? - MC Automobile Users.....	50
<b>Figure 4.19</b> : With all the customization on your car, how important for you that your car stands out from the crowd? - Modified Automobile Users..	51
<b>Figure 4.20</b> : With all the customization on your car, how important for you that your car stands out from the crowd? - MC Automobile Users.....	52
<b>Figure 4.21</b> : Do you continue changing and modifying parts of your car? - Modified Automobile Users.....	53
<b>Figure 4.22</b> : Do you continue changing and modifying parts of your car? - MC Automobile Users.....	53
<b>Figure 4.23</b> : Would you let someone else drive your car? - Modified Automobile Users.....	54
<b>Figure 4.24</b> : Would you let someone else drive your car? - MC Automobile Users	55
<b>Figure 4.25</b> : Do you talk about your cars with your friends? - Modified Automobile Users.....	56
<b>Figure 4.26</b> : Do you talk about your cars with your friends? - MC Automobile Users.....	56
<b>Figure 5.2</b> : Physical Effort and Mental Effort.....	64

# **AUTOMOBILE PERSONALIZATION STRATEGIES OF AFTERMARKET MODIFICATION AND MASS CUSTOMIZATION**

## **SUMMARY**

Automobiles, as all commercial products are the subjects of material culture due to their role to perform on behalf of their users. These social functions that the vehicles are loaded with are direct opposites from the approaches of most automobile producers. The producers try to make every new vehicle slicker, and free of mechanical traces. An appearance that would not contain any human connection is tried to be achieved as if the automobiles are created, not produced. This approach makes automobiles the subject of commodity fetish as well. The user initiated personalization processes can be seen as a counter-behaviour to create a more humanized connection between the people and the machines. Therefore, personalized automobiles contain extensive information about their users. Personalization on automobiles takes place in mainly two different forms.

The first possibility is that a certain mass produced product being personalized by a user after it's bought. In this case it is defined as aftermarket modification. The other possibility is that the producer changes the mass produced product according to the customers desire before selling it. The personalization process still does not interfere with mass production; consequently it is called as mass customization. On the aftermarket modification, the initiative is usually on the user. Therefore the level of mental and physical efforts is higher. As Oppose to this, on mass customization, the user personalizes the product via the options provided by the designer. The high level of control on this process protects the brand identity from the extreme example of hacking. On these examples, the object is radically transformed into something else. Even though mass customziation can provide a stronger connection between the user and the automobile, on the cases of modification the connection is even stronger.

Product personalization in general has variety of aspects. These can be listed down as: 'Mental Effort' that consists of creative design decisions of the user, 'Physical Effort' that covers the required physical involvement of the user during the personalization process of the product, 'Flexibility' aspect that includes the potential of change during persnoalization, 'Initiation' of the designer or the user, 'Goal of the Product: Utility or Appearance' or in some cases social goals, 'Personalization Moment' that defines wether before, during or after purchase of the product, and finally 'Deliberateness' of the personalization process. So, in this thesis, the possible aspects that can be adapted from aftermarket modification to mass customization according to this guideline are tried to be found.



## OTOMOBİL KİŞİSELLEŞTİRME STRATEJİLERİ OLARAK MODİFİYE VE KİTLE ÖZELLEŞTİRMESİ

### ÖZET

Otomobiller, birçok obje gibi sosyal ortamlarda kullanıcılarını temsilen mesajlar iletirler. Bu durum otomobillerin seri üretime geçmiş olduğu zamandan bu yana farklı bağlamlarda ve farklı içeriklerde devam etmektedir. Bir ürün olarak otomobil, sosyal ya da fonksiyonel farklı amaçlara hizmet edecek şekilde kullanıcıların istekleri doğrultusunda kişiselleştirilmektedir. Otomobiller gösterişçi tüketim dahilinde de tüketicilerinin maddiyatıyla ilgili iletişim araçları olarak sosyal performanslara sahiplerdir. Kişiselleştirme kimi zaman üreticinin de sürece dahil olduğu bir şekilde uygulanırken, kimi zaman da kişiselleştirme insiyatifinin tamamen kullanıcıda olduğu modifiye işlemleri gerçekleştirilir.

Amerika Birleşik Devletleri'nde ortaya çıkan Hot-Rod kültürü ya da Avrupa'da daha yüksek ekonomik sınıflara hitap eden Coach-builder'lar bu kişiselleştirme süreçlerinin geçtiğimiz yüzyıl içerisinde gözlemlenebilecek olan örnekleridir.

Otomobiller, kullanıcılarıyla ilgili kişisel mesajlar taşıdıkları doğrultuda maddi kültürün konusu dahilindedirler. Bu ürünlerin sosyal fonksiyonları olması, onları maddi kültür dahilinde insanların iletişim kurması için aracı olan objeler haline getirmektedir. Kişiselleştirilmiş otomobiller, kullanıcı ile ilgili çok daha fazla kişisel bilgi içerirler. Otomobiller ya satın alma sonrasında modifiye edilerek ya da satın alınmadan önce internetteki uygulamalar aracılığıyla kişiselleştirilebilmektedirler.

Otomobil kişiselleştirmesi bu araştırma dahilinde yedi farklı parametre altında kategorize edilip, incelenmiştir. Bu parametrelerden ilki kullanıcının kişiselleştirme esnasında nasıl bir yaratıcı ve zihinsel süreç içinden geçtiğinin incelendiği 'zihinsel çaba' olarak değerlendirilmiştir. İkincisi kişiselleştirme sürecinde kullanıcıyı fiziksel olarak ne kadar dahil olduğunun incelendiği 'fiziksel çaba' parametresidir., 'Esneklik' başlığı altında kişiselleştirilen ürünün kullanım öncesi, kullanım sırasında ya da sonrasında tekrar değiştirilmeye ne kadar açık olduğu gözden geçirilmektedir. Kişiselleştirme süreci dahilinde sürecin kimin kontrolünde olduğu 'insiyatif' başlığı altında incelenmiş olan bir başka parametredir. Objenin kişiselleştirilmesinin hangi sebeple yapıldığı 'ürün amacı' parametresi altında incelenir. Ürün fonksiyonel, görsel ya da sosyal sebeplerle değiştirilebilir. Bunlar dışında kişiselleştirmenin ne zaman gerçekleştiği, 'kişiselleştirme anı' adı altında değerlendirilir. Son olarak 'kasıt' parametresi altında bu sürecin bir istekle mi yoksa kendiliğinden kullanım sonucu mu oluştuğu değerlendirilir.

Tezin içeriğinde, otomobiller aynı zamanda maddi kültür dahilinde meta fetişizminin de konusu olarak incelenmiştir. Çıkarılan her yeni modelle birlikte otomobillerin üretimle ilgili tüm detayları gizlenmeye ve parlak, pürüzsüz insan yapımı olduğunu gizleyen ürünler haline gelmektedirler. Bu durum ürün ve kullanıcı arasındaki iletişim bağı koparmakta ve uzaklaştırmaktadır. Bazı insanlar da otomobilleriyle

daha bireysel bağlar kurabilmek adına bu kişiselleştirme süreçlerine dahil olmakta ve kopmakta olan bu iletişimi ürüne bireysel müdahalelerde bulunarak tekrar kurmaktadır. Modifiye edilmiş otomobiller bu doğrultuda biriciklik değeri kazanmakta ve seri üretim bir obje olmaktan uzaklaşmaktadır. Kişiselleştirme bu noktada ürünün insan eli değmemiş bir obje olarak metalaşmasını kırıp onu çok daha bireysel ölçekte tekleştirerek farklı bir metalaşmaya yönlendiren bir süreç olarak ele alınmıştır.

Ürünlerin kişiselleştirilme süreçleri tez içerisinde iki farklı temel konuda işlenmektedir. Sonradan gerçekleştirilen modifiye işleminde insiyafif daha çok kullanıcıda olduğundan dolayı daha yüksek miktarda zihinsel ve fiziksel çaba gerektirir. Seri üretime entegre edilmiş kitle özelleştirmesinde ise kullanıcı, ona tasarımcı tarafından sunulan seçenekler yoluyla ürünü kişiselleştirebilir. Bu süreç içindeki yüksek kontrol marka kimliğinin değişim süreci içinde kaybolmamasını sağlar.

Kitle özelleştirmesi, temelinde bireysel modifiye işleminin seri üretim dahilinde yeniden yorumlanması ve kullanıcıya farklı ve birçok kişiselleştirme seçeneği sunulmasına dayanmaktadır. Amaç, kullanıcıya kendine özel bir ürün aldığı hissiyatını yaşatacak bir deneyim sunmaya çalışmaktır. Bu doğrultuda ürünlerin reklam ve pazarlama stratejileri de ürünlerin kişiselleştirilebilirlikleri etrafında şekillenmektedir. Bu tür stratejilerle tasarlanıp pazarlanmakta olan otomobillere Mini ve Fiat 500 örnekleri verilebilir.

Tez dahilinde yapılan araştırmada modifiye otomobil kültürünün kitle özelleştirmesine aktarabileceği tasarımla ilişkili özellikler araştırılmıştır. Bu süreç iki aşamalı olarak ele alınmıştır. Araştırma için öncelikle nicel bilgi toplamak adına etnografik bir araştırma yapılmış, modifiyeli otomobil kullanıcılarıyla yarı yapılandırılmış görüşmeler ve onların otomobilleriyle ilgili gözlemler gerçekleştirilmiştir. Elde edilen veriler ışığında bir anket düzenlenmiş ve bulguların doğrulanıp niceliksel hale getirilmeleri sağlanmıştır.

Uç noktadaki modifiye örneklerinde ürünün tamamen değişmesi ve üreticiden uzaklaşması söz konusu olabilir. Kitle özelleştirmesinin sınırlı yapısı dahi kullanıcılar ve ürün arasında bir bağ kurulmasını sağlayabilirken, modifiyeli araçlarda bu bağ çok daha kuvvetli olduğu gözlemlenmiştir.

Bu doğrultuda kitle özelleştirmesinin zihinsel çaba, inisiyatif, performans, görüntü amaçları, ve kişiselleştirmenin süresi anlamında modifiye kültürünün kitle özelleştirmesine kazandırabileceği çeşitli değerler vardır. Bu araştırmada da bu değerlerin kitle özelleştirmesi içinde nasıl kategorize edilip uygulanabileceği araştırılmıştır. Modifiye işleminde, standart seri üretim bir otomobil kullanıcının kendi inisiyatifiyle birlikte hem fiziksel hem de zihinsel çabanın yüksek olduğu bir süreç dahilinde kişiselleştirilmektedir. Kitle özelleştirmesinde üretici tarafından kullanıcıya bir miktar inisiyatif verilerek ürünle ilgili zihinsel çaba harcamaları gereken yaratıcılık içeren bir süreç devreye sokulmaktadır. Ama bu süreç içinde kullanıcıya sunulan zihinsel çaba miktarı oldukça kontrollü ve de düşüktür. Bu sebeple kitle özelleştirmesi sunmakta olan otomobil üreticilerinin modifiye kültürünü incelemesi ve bu kültür dahilinde olan bazı konulardan faydalanması söz konusu olabilir. Böylece tüketicilere kendilerini daha rahat ifade edebilecekleri ve daha büyük ölçekte kişiselleştirebilecekleri bir ürün sunma şansları olabilir. Kitle özelleştirmesi bu açıdan kullanıcı ile ürün arasında güçlü bir bağ kurmak için büyük

bir potansiyel barındıran bir süreç olmakla birlikte henüz geliştirilebilecek ve kullanıcılara daha detaylı olarak odaklanılabilecek alanları bulunmaktadır.

Modifiye kültüründen kitlesel özelleştirmeye aktarılabilecek potansiyel özellikler zihinsel çaba anlamında ürünün görünüşüne daha ciddi müdahalelerde bulunabilmesi, çevrimiçi kişiselleştirme araçlarının yan sanayi parça üreticilerini de içermesi, basit parçalarda bireysel tasarımların uzun vadede üç boyutlu yazıcılarla üretilebilecek şekilde planlanması olarak değerlendirilebilir.

Fiziksel çaba anlamında düzenlenecek atölye çalışmalarıyla kullanıcılarına otomobillerin mekanik parçaları, nasıl değiştirilebilecekleri, bakımları öğretilerek onların da otomobillerine daha hakim olabilecekleri bir ilişki kurulabilmesi hedeflenebilir. Buna ek olarak otomobillerin kullanıcılarına kendilerini daha net bir şekilde anlatabilmesi adına tasarım sürecinde mekanik parçaları gizlemektense daha okunaklı bir şekilde görünümde vurgulamak ürünle kullanıcı arasındaki iletişimi arttırabilir.

Esneklik anlamında sunulacak daha çok opsiyon kullanıcının ürünün kullanımıyla ilgili kullanım senaryolarını arttıracaktır. Buna ek olarak kişiselleştirme süreci zamana yayılarak esnekliğin artırılması sağlanabilir. Kullanıcıları otomobillerini devamlı yenilenen parçalarla sürekli olarak hem sosyal, hem görsel, hem de fonksiyonel ihtiyaçlarına göre değiştirebilirler. Bu yeni parçalar düzenli olarak otomobil kullanıcılarına bültenler ya da farklı iletişim kanallarıyla ulaştırılabilir.

İnsiyatifin, kullanıcıyla ürün arasındaki iletişimi ve kişiselleştirme sürecini güçlendirebilmek adına tasarımcıdan kullanıcıya doğru yaklaşması kullanıcının ürünü daha yüksek miktarda özelleştirebilmesini sağlayabilir. Buna ek olarak sonradan değiştirilen orijinal yahut yan sanayi parçalarda dahi kullanıcı tasarımının kullanılması potansiyel bir gelişim olarak değerlendirilebilir.

Günümüzde otomobil üreticilerinin kitle özelleştirmesi dahilinde sunduğu opsiyonlar ürünün performansından öte görünümüyle yada dokularıyla ilişkilidir. Uzun vadede araçların performanslarının hatta motor seslerinin de kişiselleştirilebilir olması, kullanıcıya daha farklı alanlarda da araçlarını kişiselleştirebilme imkanını sunabilir.

Kişiselleştirme anının kapsamı genişletilerek ürünle kullanıcı arasında daha uzun süreli iletişim kurulmasını sağlanabilir. Ürün satın alındıktan sonra, kullanım sırasında ve sonrasında da kişiselleştirmenin uzun vadeli olarak sağlanabilir olması ürünü kullanıcıya daha bireysel olarak bağlayabilir. Bunun dışında kişiselleştirme anını genişletmek adına otomobillerini kişiselleştirmiş olan diğer kullanıcılarla görüşmeler düzenlenerek bilgi alışverişi sağlanabilir. Bu şekilde ürünün ve kullanıcıyla olan ilişkinin daha güncel kalmasına olanak tanınmış olur.



## 1. INTRODUCTION

All people try to express their selves with the objects around. It is one of the most common means of communication. The objects that surround us, our clothes, mobile phones and our automobiles have different functions from their actual intended use, to give information about us to the other people, without words. In order for these objects to represent people better, usually they are modified in their appearances, as can be seen on mobile phones or laptop stickers, different patches or modifications in clothing, etc. Even the interfaces of electronics can be customized according to users' choice of style by different wallpapers or icons. In the process of this communication, the meanings of objects become more than just their functions. John Berger (1972), in his book *Ways of Seeing* claims that publicity is about social relations, not objects and the criteria of happiness is the judgment of others in the society. Even though he addresses the publicity and social relations, he neglects the fact that these relations are often set by the possessions of the owners. With the identification of other meanings in objects, they become signs of people's ways of living and their culture. Deyan Sudjic argues that objects are the unarguable facts of everyday life. One of the key objects of the western influenced cultures is the phenomenon of the automobile. Automobiles, as all commercial products are the subjects of material culture due to their role to perform on behalf of their users. Because of this role, people often feel the need to change and adapt automobiles according to their needs and tastes. Personalization takes place in mainly two different forms. The first possibility is that a certain mass produced product being personalized by a user after its bought. In this case it is defined as aftermarket modification. This may consist of modifying and/or tuning of the previous parts of the vehicle. The other possibility is that the producer changes the mass produced product according to the customers desire before selling it. The personalization process still does not interfere with mass production; consequently it is called as mass customization (MC). According to *The 2010 Leisure Market Research Handbook*, one of the most important aspects of car customization is to create a unique look to express personal style. Therefore we can easily say that cars are like

empty canvases waiting for the interpretation of their owners, especially in the cases of aftermarket automobile modification. It is possible to say that the owners personate their cars as an extension or a reflection of their unique selves as a second-skin. Today, this theme of uniqueness is usually offered even in a stock car as an illusion created by marketing strategies with the help of designers. This thesis will try to explore ways to feed MC with the user related patterns of aftermarket modification. In order to be able to discuss the subject, on the first chapter there will be information about the context of automobile personalization, both from historical and material culture related points of view. Also for categorization of the information about personalization, a model previously developed is adapted for this specific study. After that gathered knowledge about how product personalization via mass customization is actually used will be discussed to specify the current situation on the subject. Finally, on top of all the setting information, the research held to find how aftermarket modification can contribute to MC is explained.

## **2. CULTURAL AND METHODOLOGICAL ASPECTS OF AUTOMOBILE PERSONALIZATION AND CATEGORIZATION**

### **2.1 Brief History of Custom Made and Modified Automobiles**

Until the Second World War, the automobile industry was able to offer much more personal products that were really unique to their owners. These vehicles were custom built on rolling chassis' according to the users needs and more importantly desires by coachbuilders. These coachbuilt vehicles are not products of mass production. So, coachbuilt automobiles were (and still are) luxury goods. The luxury and personal offerings of coachbuilders are strictly exclusive to the higher economic classes. The working people are not the target group of these products.

There could be three different scenarios behind a coach built vehicle. A customer may approach a coachbuilder to do the body design to a purchased rolling chassis. Sometimes a coachbuilder got assigned a series of chassis, on which basis he designed and manufactured to his own creative ideas and inspiration the new coachwork or a customer may deliver a complete factory car to the coachbuilder with the request to change the entire coachwork or modify certain elements. (Url-1) Regardless of the procedure of production, the finalized coachbuilt vehicle was one of a kind, therefore unique to the owner. This fact allowed the user to connect with the object. Even, the young Dutch coachbuilder company Vandenbrink (founded in 2006) suggest on its catalog 'On request our designer will translate your wishes and personal taste into a unique coachwork and interior design. A very personal process.' They use the chassis of a Ferrari 599 GTB Fiorano, which can already be considered as a luxury sports vehicle and turn it into an even more unique and prestigious object. Sadly though, there are not as many coachbuilders as in the past. After the monocoque chassis' were introduced most of the coachbuilders slowly lost their popularity or changed their business into design houses like Zagato, Pininfarina or Bertone. The reason was that the monocoque chassis' were not as flexible as a rolling chassis in terms of allowing different kinds of body part styling. Some other firms specialized on aftermarket parts like Giannini rather than turning into design houses.

Nevertheless, there are still coachbuilders existing all around the world but not as bright and many as before.

Zagato, working also as a design house, still build limited production coachbuilt vehicles. On Figure 2.1 is the 2008 model Bentley Continental GT. Zagato built its own version, the Zagato Bentley Continental GTZ (Figure 2.2) on the chassis of the original Bentley. They only produced 9 of them. It is a very boutique product in term of exclusivity. Even though the similarities may be seen, the perception of the vehicle is changed immensely.



**Figure 2.1 :** 2008 Bentley Continental GT.



**Figure 2.2 :** 2008 Zagato Bentley Continental GTZ

The coachbuilt automobiles are very special. They are tailored exactly for the user, and so they are very exclusive and very pricy. Naturally, even on the early years of the twentieth century, working people who wanted to customize their vehicles according to their own taste started to modify their vehicles with aftermarket parts as well. Especially in the United States, the hot-rod culture rose in search for improved performances. This pursuit led to a special connection between the driver and the vehicle. The term hot-rod comes from the heated pipes that are left open. Their aim was to achieve higher speeds, improved mechanical and social performances. The modification in hot-rod examples started by reducing the weight of the vehicles by removing unneeded accessories as fenders and lights, in some cases, even the body. By lightening the vehicle in this way the owner was able to obtain faster speed and acceleration. Firstly it started from the streets, but soon after the start of the phenomenon, drivers discovered that dry lakebeds were a great place to race. ‘The first important organized meeting of hot-rodders took place at Muroc Dry Lake, California, on March 25, 1931. The object of this meeting was to clock individually each of the cars for top speed over a short, flat, dry-lake course (Mansell and Hall, 1954). So as can be observed in meetings, the phenomenon is very much of a social one. Hot-rods were built as a leisure group activity by organized groups and clubs.

Today, it can be easily seen that the subculture of aftermarket car modification is a very much male-dominated issue as the hot-rod culture. In fact the automobile culture of the last century is mostly male dominated. Kadirov and Varey speaks about the dominant focus of marketing of automobiles on the past century was to build and show them stronger, bigger, and faster. These messages are so much repeated continuously through advertising that even without using the word ‘automobile’, these words brings an image of an automobile in a persons mind.

In the hot-rod culture, this phenomenon of being faster, bigger and stronger, is celebrated in a very exaggerated way. The visuals that are painted on the surfaces of the hot-rods are often similar to old-school tattoos that represent masculinity via power and control such as flames, skulls, knives, hearts, wild animals etc... These kinds of surface finishes are generally used for underlining the aggressive and powerful nature of the vehicle they are painted on. Besides the fact that these illustrations are generally derived from forms with high textural qualities, they are

applied in a slick and sterile way to the automobile bodies. They are mostly bright and shiny, in harmony with the chrome plated decorative engine parts that are usually visible and highly emphasized. It can even be said that they are like sculptures celebrating the power via mechanicalness. The conflicting but usually harmonious synergy of forms from nature (flames, skulls) and brute mechanical parts both visually symbolize power and ascribe these meaning to their owners, who are in control of these vehicles. It can even be added that hot-rodders want to show their identities, as strong male figures that are able to tame such enormous power, which would normally be beyond their capabilities.

The hot-rod term 'muscle car' is a perfect example of how these vehicles carry out meanings. Hot-rod phenomenon on the late 20<sup>th</sup> century is an extension of the paternalistic, car oriented, male dominated social structure of the American culture at the post second world war period. Foster mentions the terms rose at that period as, 'cruisin' the strip', taking a date to the drive-in to 'make out', and hanging out with the gang at the local fast-food restaurant. According to him, young American males began to judge one another on the basis of their mechanical abilities and the make of car they drove.

These messages also have reflections in Hollywood movies that feed and define the popular culture of America starting from back in its early years to even today. The male identity is often pictured as 'man and his vehicle' in movies such as 'The Vanishing Point' (1971), 'Gone in 60 Seconds' (1974) and 'The Fast and The Furious' (2001). All these movies belabor the relationship between masculinity and automobiles. Even in a movie that has nothing to do with automobile culture, like 'Waking Life' (2001), the character in the boat car says: 'I feel like my transport should be an extension of my personality. And this is like my little window to the world.' Therefore it can easily be said that in the construction of twentieth century's automobile culture and today, Hollywood cinema had a huge role. It can be argued whether the culture is designed to make the society more dependant on automobiles for the sake of large corporations of car producers and oil companies or the culture is reflected from the society just to celebrate the means of transportation technology of that context and time. Whichever the answer is, automobiles became an undeniable

main element of today's popular culture. This brings us to the role of modified automobiles in material culture.

## **2.2 Material Culture and Aftermarket Automobile Modification**

Modified automobiles contain different levels of messages. These messages are to be delivered in both visual and auditory channels. Attfield (2000) states, "Things' are, instrumental in the literal and grounded sense of mediating the link between people and artifacts and therefore between the human worlds of the mental and the physical.' For this reason, objects can be given the role to communicate behalf of their owners. In the case of modified cars, they can express uniqueness by being different from the mainstream looks of the cars. This fact puts automobiles into the subject of material culture. Woodward defines 'material culture' as how apparently inanimate things within the environment act on people, and are acted upon by people, for the purposes of carrying out social functions, regulating social relations and giving symbolic meaning to human activity. Starting with their commercial use, automobiles have been assigned many different symbolic roles by users different from their literal function to carry people from A to B. The vehicles, regardless of their visual qualities and prices, all state social messages on behalf of their users. An automobile may state social and economic class as a conspicuous consumption good. It may state the users, lifestyle and/or worldview on different topics. For example an off-road vehicle, which has off-road equipment (winch, snorkel, off-road tires, etc.) installed, may work as a signifier of an adventurous person, whereas a sensible hybrid car may state an environmentally aware person. Also, social distance in a different scale can be set through people's vehicles too. A dark saloon car with dark windows, which are never open may utter the user doesn't want to get close to other people. Another message an automobile can deliver is the users' mechanical skills and/or the level of control over a machine. A highly modified car may affirm the driver is very much involved with the object. Russel W. Black (..) says: "It seems an inescapable fact of modern life that we learn, define, and remind ourselves of who we are by our possessions." A modified vehicle as a possession can be seen as an absolute definer of its owner, even an extension of self because of the intimacy they share. Most of the modified automobile users are capable of assembling small parts on their vehicles. From the perspective of mechanical involvement, motifs of car

modification, in its basics, can be compared to the motivations of do-it-yourself (DIY) projects. Collin C. Williams (2008), in his article, “Re-thinking the Motives of Do-It-Yourself (DIY) Consumers”, mentions one of the main motivations of DIY consumers as to seek self-identity from the end product. The same theme can be associated with most of the modified automobile users too. Because of the connection that is built between the object and the user, during the production and/or assembly, the object not only acts as a functional tool but also as a social instrument for the owner as well.

### **2.2.1 Automobiles as conspicuous consumption goods**

The socially instrumental role of the object directly relates the topic to the concept of “Conspicuous Consumption”. Thorstein Veblen (1899), came up with the concept of “conspicuous consumption” in his book, *Theory of the Leisure Class*. He explains the motives behind the consumption of luxury goods with this concept. He argues that main idea behind consuming a luxury good is to get satisfaction from the audience’s reaction to the wealth being spent rather than to the attributes of the good itself. In this concept, the audience must agree the superiority and the attributes that the object ascribes to the consumer. Since the first years of automotive production, luxury automobiles have been seen as perfect status symbols, therefore “conspicuous consumption” goods in most cultures. Coachbuilt cars became part of this concept via their exclusivity.

Today’s luxury automobile manufacturers achieve this title via marketing strategies and also via thoughtfully designed user experience of the vehicles. This experience is delivered via the tactile qualities of the materials and also new technological devices they offer in the vehicles. Also, the illusion of exclusivity is being tried to be attained by offering a long list of optional accessories that would make the consumer to perceive the vehicle unique to self. With the growing opportunities of MC, the automobiles can be differentiated from the others by real small changes such as, color combinations, exterior and interior accessories, different kinds of surface finishes, different wheels, etc. These equipments and changes cost very little to the producer but at the same time create the feeling of uniqueness. Uniqueness, perceived by the audiences give the user the power of showing social advantage over the people driving trivial and boring cars. Therefore MC vehicles can be considered

as conspicuous consumption goods even in the cases that these automobiles are not luxury goods.

The essential idea to modify an automobile so that it can achieve the ability to compete against cars with much higher price tags and symbolic values can also be considered as a counter-behavior against Veblen's term of 'conspicuous consumption'. The incontestable underdog cheap cars become competitive vehicles. But how are these messages sent within the modified cars? There are a few different parameters. Firstly, through exaggerated geometries of the automobile parts to make them look like expensive sports cars and stand out more from the crowd. Secondly, through high volume music and engine sound that LaBelle (2008), defines as 'Auditory Scaffolding' and finally from the application of different kinds of surface finishes in order to attract more attention. This behavior can be explained as a part of Goffman's (1959) definition of 'performance' as a presentation of self, a person's effort to create specific impressions in the minds of others. In this situation, the performance of the individual is conveyed via the object, the automobile. The individual socializes through the automobile. According to Jaramillo and Moizeau (2003), the purpose of conspicuous consumption is to enter in communities/social groups in order to benefit from social interactions. The user of a modified vehicle may be considered as an individual who is seeking to get conformity from a higher economical and also social class. Solomon Asch (1952), explains the reasons of conformity as the motive to avoid the discomfort of being different from the social group. The individual seeks to fit in to a certain social group by using a material object as a signifier of the self. From this perspective, the automobile starts to act as a tool for social mobility.

Automobile modification also has its extreme edges. On extreme examples, the brand identity gets lost within the changing appearance. It is often defined as hacking when the object is radically transformed into something else. Otto von Busch and Karl Palmas (2006), state;

“Hacking is similar, but go beyond, customization. Where customization offers a limited amount of options for change, hacking is in this sense the “coloring outside the lines”. It is modifying something beyond the pre-defined design field of original intensions and customization. It is about

scratching ones own itch, but using unexpected methods. Hacking is to find an own way, to encourage exploration, collecting curiosities into action. A hack can be seen as a deeper intervention of customization. It is a tactic for cultural counterintelligence transforming pre-existing elements to evoke meanings not originally intended in the raw material of the hack. As such it is animated and anti-authoritarian, seizing back imagination subjugated by technocrats or the narrow mindedness of companies. Decentralizing control and empowering will at a low level as a response to the closing of systems.“

Still, hacking is an extreme situation and not single automobile modifier showed a motivation to deconstruct the brand image that much, on the unstructured interviews. They often seek acceptance from higher social classes rather than to declare rejection to the means of social structure. It is true that some of the modifications take the object too far from its original state and the meanings of its original brand but in the end they often miss the awareness and the intention of hacking the object.

There are limits of personalization too. The advanced phases can result in deconstruction of the brand identity. At that sense, some carmakers see aftermarket modification as a threat to their brands image. Audi held an advertisement campaign in Turkey to make these limits clear and to define its target group as non-modifiers. Two examples from the advertisemenet campaign can be seen on figure 2.3 and figure 2.4 below. In these advertisements Audi shows some stereotypes that are associated with modifiers and people who are considered as socially ‘lower’. They state on the advertisements that these are options you can never find on Audi’s. Therefore Audi limits its user profile to a certain group while ignoring personalization. In this case, personalization of an object is being connected to negative meanings. Also, using these kinds of stereotypes can be considered as socially and economically discriminative.

### **2.2.2 Automobiles and Commodity Fetish**

Automobiles today are disguising their mechanicalness with increasing amount of camouflage in every new model. Their signs of production are well hidden under plastic shells like they are not produced in factories but as if they are objects that are created by a greater power for the use of mankind.




  
 Audi
   
 Wirkung durch Technik

Figure 2.3 : Audi Advertisement.




  
 Audi
   
 Wirkung durch Technik

Figure 2.3 : Audi Advertisement.

Richard Sennet (2008), therefore argues “The maker leaves a personal mark on his or her presence on the object. In the history of craftsmanship, these maker’s marks usually have carried no political message, as a graffiti scrawled on a wall can, merely the statement anonymous laborers have imposed on inert materials: fecit: “I made this”, “I am here, in this work,” which is to say, “I exist.” This connection

between the product and self-declaration of existence is fading with improved automobiles. Also Alexandre Kojève (1980), states that "The man who works recognizes his own product in the World that has actually been transformed by his work: he recognizes himself in it, he sees in it his own human reality, in it he discovers and reveals to others the objective reality of his humanity, of the originally abstract and purely subjective idea he has of himself." User's allowance to reach the mechanical parts and interfere with them is being restricted more and more everyday. For instance, BMW has been using the tagline "Ultimate Driving Machine" since 1975. In 2006 they added "A Company of Ideas", which broadens the meaning of the company but still the tagline, "Ultimate Driving Machine" suggests high levels of user interaction and BMW is still considered as one of the carmakers who offer higher amount of user control over the vehicles. In reality after the change in the tagline, BMW started to wrap its cars further to hide its more mechanical parts. A very solid example of this change can be considered as the removal of spare tires. Changing a tire can be seen as one of the most basic acts that involve mechanical interaction with the vehicle; so in order to avoid it BMW (as well as many other car makers) replaced all its tires with run-flat ones. A run-flat tire lets you continue driving your car after a deflation when punctured. The interesting part is that if a tire gets a higher amount of damage, the user wouldn't be able to drive it and because there isn't any spare tire, he/she would be stuck. Getting rid of a spare tire lightens the cars a bit and provides larger boot space. But even neglecting the possibility to get stuck, it discourages users to get involved with the vehicle in any possible mechanical way.

Furthermore, the engines can be taken into consideration as a fine example of hiding mechanicalness over passing years. The change throughout the models of Volkswagen's Golf GTI can be seen chronologically below in the figures 2.5, 2.6, 2.7, 2.8, 2.9 and 2.10. The engine of the first generation is not concealed. It celebrates its mechanicalness and allows the user to interfere in nearly every possible way with any part of the engine. Whereas starting from the MK4 the engine is not visible at all. It is covered with a plastic mask. With every new model of a vehicle, the mechanisms go more disguised. The perception of the vehicle and the relation between its parts lost the connection. The vehicle started to pretend as it is not produced but as it just came to existence miraculously out of nowhere.



**Figure 2.5 :** Volkswagen Golf MK1 GTI Engine.



**Figure 2.6 :** 1986 Volkswagen Golf MK2 GTI Engine.



**Figure 2.7 :** 1993 Volkswagen Golf MK3 GTI Engine.



**Figure 2.8 :** 2001 Volkswagen Golf MK4 GTI Engine.



**Figure 2.9 :** 2004 Volkswagen Golf MK5 GTI Engine.



**Figure 2.10 :** 2009 Volkswagen Golf MK6 GTI Engine.

The increasing concealment can be observed in nearly all of the automobile producers. Another example can be shown from wheels and the bolts that connect them to the car. Even though some producers still keep them visible, in some cases the bolts are hidden as well. On the example on figure 2.11 below, the actual bolts are hidden by a plastic cap.



**Figure 2.11 : 15" RS4 Wheels.**

If we go a step further the hubcaps may be the ultimate concealment parts of the wheels. An example of a hubcap that Toyota uses is shown on Figure 2.12 below. They are used for hiding too mechanical looking, usually black steel wheels. They pretend to be like sophisticated alloy wheels but for a cheaper price. Besides their inability to hide the fact that the car has low-cost, industrial appearance wheels, they show that producers are in some level ashamed with their production.

Marx (2009), states in *Capital*, "Fetishism of commodities has its origin in the peculiar social character of the labor that produces them." The manufacturers try to hide the traces of production methods and assembly in mass-produced automobiles.

Therefore people hardly relate to the objects own nature of existence. Laura Mulvey talks about the concept of disavowal in her book: "The disavowal characteristic of

fetishism is due to misunderstandings of the complex stages inherent in an abstract, symbolic system and the political need to disavow the worker's labor power as source of the commodity's value."



**Figure 2.12 :** Toyota Huhbcaps.

By erasing all the traces of origin, the object is dehumanized as possible due to the aim of idealizing and even sanctifying the object. The automobile ultimately becomes a fetishistic artifact. In this sense, designing to hide assists the marketing strategies to make the object more desirable by cutting a channel of communication with the users. But in reality doesn't people need any connection whatsoever? Are traces of production really decreasing the exchange value of a product?

Robert M. Pirsig (1974), compares traveling with a car and a motorcycle in a part of his novel *Zen and the Art of Motorcycle Maintenance* as:

"In a car you're always in a compartment, and because you're used to it you don't realize that through that car window everything you see is just more TV. You're a passive observer and it is all moving by you boringly in a frame. On a cycle the frame is gone. You're completely in contact with it all. You're in the scene, not just watching it anymore, and the sense of

presence is overwhelming. That concrete whizzing by five inches below your foot is the real thing, the same stuff you walk on, it's right there, so blurred you can't focus on it, yet you can put your foot down and touch it anytime, and the whole thing, the whole experience, is never removed from immediate consciousness."

The isolation provided by the car and the alienation from the actual experience is increasing with each and every new model just like the concealments on them. The isolation for sound and weather conditions unfortunately ends up distancing the object to the user too. But these changes could be considered as users needs of comfort. Disregarding the comfort equipment, the actual driving experience is becoming more computer-assisted, more digital and consequently more distant. Today, vehicles can adjust the speed, the brakes and even the cornering. Probably the emerging technologies and driving assistance tools would put the driver in a nearly assistant position in the whole activity of driving. Therefore with the passing time the automobiles are becoming more and more like objects that fell from the sky all by their own without a producer that also can act without much need for a driver alone. It can even be told that they are starting be perceived as naturally existing just like a tree or the ocean. The automobile nearly becomes an autonomous object. The connection between the user and the vehicle and its production is being reduced for the sake of increasing comfort, safety and appeal both in terms of functional involvement and usage experience.

The phenomenon of aftermarket automobile modification reveals peoples need for some stronger kind of emotional and visual connection towards the automobiles. By modifying the automobile, the users rebuild the connection between the product and the user. The changes made by the craftwork of the user or in some cases the mechanic are displayed proudly on a modified vehicle. The vehicles start to show their human origin, the human connection. The abstractness of the process becomes more mechanical, more real and solid in the eyes of their owners. It is desired for the vehicle to stand out from the crowd and show that it came of a user involved process. Therefore, the builder of a product actually becomes the user of it again. This behavior reverses the change towards a more closed shell around a product in a personal scale. Via aftermarket modification, the mass produced automobiles become

partially handcrafted objects that carry the signs of the processes of its labor, eluding the shame of their creation on the way.

Another aspect of automobiles being 'conspicuous consumption' goods is their association with the male identity. Conspicuous consumption serves as means by which men communicate their social status to prospective mates (Saad, Voongas, 2009). A more powerful, faster and bigger car works as a character agent to improve social performances of the male identity in the eyes of the audience. Sudnie and Kenrick (2011), examines this issue more thoroughly in "Peacocks, Porsches, and Thorstein Veblen". They state that via automobiles male figures try and send messages to the other sex that will state the owners of such vehicles are more preferable. They concluded that the signaling provided by a Porsche, which can be considered as a desirable and expensive sports car, would make a male more preferable in short term mating.

The social groups of automobile enthusiasts are also very male oriented. During the semi-structured interviews and the survey, different car modifier groups have been examined and no one had any female members. Also Karen Lumsden (2010), suggest in her article Gendered Performances in a Male-Dominated Subculture Participation that "Car culture allows opportunities for men to demonstrate their knowledge, to stand out and be unique, and feel they have met societal definitions of masculinity." Therefore the subculture of car modification has a strictly male dominated social structure. Gad Saad and John G. Vongas (2009), conducted a research using evolutionary psychology as a theoretical framework. They examined the relation between conspicuous consumption and men's endocrinological responses. They came up with; "...participants' testosterone levels rose markedly when driving the luxurious sports car and partially dropped (directionally) when driving the decrepit family sedan. Thus, endowing the men with a vehicle that few individuals could afford prompted their testosterone levels to rise significantly, suggesting that conspicuous consumption may trigger an endocrinological response in men that mimics the one elicited during competition." This research confirms the relation between masculinity and automobile-oriented cultures.

Bengry-Howell and Griffin (2007), conducted a research among young British men who modify their vehicles. Their findings also support the idea that automobile

modification is a paternalistic subculture but the sense that it breaks the effects of mass production. They state; "Car modification and participation in car-based cultural practices also enabled the achievement of working-class masculine values, by which physical work is viewed as a source of pride and tangible rewards are offered for efforts expended. Participants viewed themselves as 'culturally privileged' due to their ability to produce these unique cars." The modifiers' ability to participate in a culture that is mechanically involving their skills, lets them the satisfaction of being privileged, being better, more preferable and stronger in a social structure compared to the ones who are unable to take part in. They take objects of mass production and turn them into objects of craft. This process lets them control the object to its every detail unlike the mass production in which the labor is divided.

The main functional use of an automobile in its intended context is basically transportation of people and other objects between different locations. In some cases automobiles can become detached from the actual functions. Recontextualisation of them for the sake of their display roles loads them different meanings. Car modification clubs, founded according to certain brands and models of cars, who use online forums for communication channels, organize meetings on popular social recreational areas. One of the roles of these meetings is of course the intention of 'display'. In these occasions, vehicles represent their users and socially perform for them. For an automobile to be a better display for a users identity, they are modified. There are strong contradictions between 'everyday use' and the 'cultural roles' of the modified cars. Most of the modified car owners complain about small damages on their cars caused by the extremely minimized height of their cars. Also they are louder, and because of their firmer suspension they are uncomfortable too. This is a point where the symbolic value of modifications becomes so important that they even make the practical, functional 'everyday use' needs of the car irrelevant. Some of these vehicles are not even used as daily means of transportation because of the difficulties in daily usage too. Consequently modified automobiles become as collectibles.

Walter Benjamin (2002), in *The Arcades Project*, considers the most decisive aspect of collecting as the detachment of the object from all its functions, and the object to enter into a close conceivable relation with objects of the same kind. This recontextualisation process puts the object into a diametric opposite of utility.

Therefore a highly modified automobile separated from its major functions, may be considered as the subject of collecting.

Moreover, Baudrillard's (1997) view of collecting in his book, *The System of Objects*, has some similarities with Benjamin too. According to him, "What is possessed is always an object abstracted from its original function and thus brought into relationship with the subject. In this context all owned objects partake of the same abstractness, and refer to one another inasmuch as they refer solely to the subject." The subject in this situation can be considered as the display value of modified vehicles in a social group. These automobiles are entirely abstracted from their intended usage. The other objects in this example can be contemplated as the other modified vehicles in these car clubs.

Considering all these aspects of aftermarket modified vehicles and how they perform in a social structure, they are indeed typical examples of the material culture. All these cultural particularities are a result of personalization of the product, therefore to define certain elements and to discuss possibilities for future development of the product, a certain kind of categorization is need.

### **2.3 A Model of Product Personalization**

Market automobile modification and its possible contributions to MC, a specific model would be introduced to define boundaries. At this point, Ruth Mugge, Jan P.L. Schoormans and Hendrik N.J. Schifferstein's (2009) examination of product personalization in different specific dimensions comes in. These dimensions are, 'mental effort', 'physical effort', 'flexibility', 'initiation', 'goal of the product' (utility of appearance), 'personalization moment' and 'deliberateness'. This categorization of dimensions of product personalization is beneficial to evaluate different aspects that MC can benefit from aftermarket automobile modification.

Mental effort is defined as the degree of creative involvement offered to the consumer. The lowest mental effort for a user is the case that he/she has no choice to personalize the product, non-whatsoever. They state that the mental effort is still minimal when the consumer is given the choices that are already prepared by the designer. The example of a higher involvement and mental effort is the case of Nokia

3220, which can be seen on Figure 2.12, in which the user can apply a personal image to the surfaces of a cell phone.



**Figure 2.13 :** Mugge, Schoormans, Hendrik and Schifferstein’s example of a product that requires high mental effort for personalization from Nokia 3220 website.

Product personalization may differ in the degree of physical involvement required by the consumer. While the products that are personalized via MC toolkits on the Internet, such as the Nokia cell phone, require no physical involvement and effort, some products rely on consumers’ physical effort in order to be personalized. The example given is Tord Boontje’s Garland lamp on Figure 2.14 below. It is a lamp is delivered as a do-it-yourself kit consisting of a metal sheet. The consumer can push shapes out of this metal sheet and hang these over the lamp. By this way, each lamp would be different from the others and more personal compared to a regular lamp. The design of the product allows the users to connect with the lamp in personal way by requiring physical effort.



**Figure 2.14:** Garland, a lamp made out of etched metal (1.6 m), designed by Tord Boontje (2002).

Some products can be personalised only once, whereas other products can be personalised over and over again. Flexibility in personalization gives the user the opportunity to change it over time according to changing need and taste as well. The product can be personalized either by one or more components that the product has. Mugge gives the example of a modular shelving system designed by RE, Nicole Hüttner, Nina Nicolaisen and Silke Warchold. This system on figure F.III.1 can be rearranged repetitively with the user's initiative.



**Figure 2.15:** Modular shelving system made out of reclaimed furniture and wood, designed by RE, Nicole Hüttner, Nina Nicolaisen and Silke Warchold (2002).

The dimension of initiation concerns the person who initiates the personalization process: the consumer or the designer. When the designer initiates personalization for the product, he/she gives the consumer some predetermined choices. The cell phones with interchangeable covers may be an example for the designer initiated personalization, whereas in some situations the product can also be personalized with solely on the users initiative. If the user paints a product to change its surface qualities such as color, pattern and texture, it is entirely the choice of the user. Personalization is initiated by the user because of personal needs. There are also instances where the options of personalization are both initiated by the user and designer at the same time in different stages of personalization. The example of the ‘Do Scratch’ lamp on Figure F.IV.1 is one of them. The lamp cannot be used if its not interpreted by the consumer. It is painted black and the consumer needs to scratch it in order to let some light out of it. This way of personalization is determined and initiated by the designer but how it will be done is left to the initiation of the consumer. In this example the user gets involved with the product both mentally and physically. The product is flexible to a certain extent because it can be re-scratched after usage but it cannot be undone.



**Figure 2.16:** Do Scratch, a lighting armature with a black coating (27 6 27 6 5 cm), designed by Martí Guixé (2000).

Consumers can personalise products for utility-related and appearance-related goals (Fox 2001). Utility-related personalization is the changes on a product's functionality. The dimension Personalization moment deals with the moment the personalization process takes place: before purchase, before usage, or during usage. The personalization moment allow different personalization possibilities (Bloom

Monk 2003). After purchase, many options in the product are already fixed, which limits the consumer's design freedom. In contrast, before purchase the product can, in theory, be perfectly adapted to fit every individual. Products may become personal without the consumer's deliberate input (Piller, Müller 2004). Deliberateness therefore is defined by the intentions of the consumer.

### **3. MASS CUSTOMIZATION, DESIGN AND MARKETING**

#### **3.1 Definitions and Literature**

Mass customization (MC) is defined as an offer which allows the consumer: (a) to personally modify certain elements that make up the product, within an ensemble of modules of choice which are predefined by the brand, and (b) to buy the co-designed product (Merle, Chandon and Roux, 2008). Steen, Manschot, De Koning studies the term co-design as creative cooperation during design processes— rather than on the co-creation, which also refers to creative cooperation during service delivery and usage. The term co-design is also commonly used as in Maaik Kleinsmann's (2008) definition; Co-design is the process in which actors from different disciplines share their knowledge about both the design process and the design content. The benefits of co-creation cut both ways. While consumers benefit from greater personalization and value as a result of co-creation processes, the motivation for companies is about building competitive advantage by turning just-in-time knowledge from customers into just-in-time learning for their organization (Roser and Humphreys, 2009).

When it comes to MC, marketing, production and design aspects act in relation with each other. From the marketing perspective, according to Martin Schreier (2006), generally, new products are developed in response to the average needs of a specific target market. Consequently, they are also limited to satisfying the average needs of customers. They are 'one size fits all' or at least 'one size fits one segment' products. Obviously, this traditional approach makes sense if the respective market or clustered segment is large enough, and if customer preferences within this segment are relatively homogeneous. Certain customers with very unique needs then remain, to a certain degree, unserved. The only miss caused by standardization is not unserved customer groups but also users who seek more personal connections too.

Involving user on the design process also fits to another term, 'user design', that is used to define a specific kind of product customization. Product customization uses a flexible production system to deliver a product to order that matches the needs of an

individual customer or user. User design is a particular form of product customization that allows the user to specify the properties of that product (Randall, Terwiesch and Ulrich, 2005).

Many companies in various industries have begun to offer their customers the opportunity to design their own products online. Web-centric knowledge-based configuration systems are successful applications of the web technology and the artificial intelligence technology and can provide an ideal platform that integrates manufacturing companies with their customers for implementing mass customization (Ong, Lin and Nee, 2006). The companies provide Web-based mass MC toolkits that allow customers who prefer individualized products to tailor items to their specific preferences. MC toolkits are defined as a set of user-friendly design tools that allow trial-and-error experimentation processes and deliver immediate simulated feedback on the outcome of design ideas. Once a satisfactory design is found, the product specifications can be transferred into the firm's production system, and the custom product is subsequently produced and delivered to the customer (Franke, Keinz and Schreier, 2008).

The case of MC automobiles fits into the category of user-design, as the toolkits of MC get users involved in the process of design. At the same time in most cases the users don't get to take part in the production and/or assembly process' of the vehicles, therefore the users only involve with the product in a more abstract and virtual notion. The connection between the product and the user is achieved via providing the sense of uniqueness. The value consumers derive from self-design activities might also be contingent upon the level of "doing it oneself" they generally experience. (Franke and Schreier, 2010) The motivation of this experience is due to the desire to reinforce or enhance self perceptions of creativity, anticipated satisfaction derived from completing a creative project successfully, enjoyment derived from the freedom to choose the process and/or design of the creative task, desire to attain or improve the skills necessary for completing creative projects, anticipated satisfaction derived from immersion in the creative process itself and Desire to share creative experiences with others who are similarly motivated (Dahl and Moreau, 2007). Also another motivation that Moreau found is the users motivation to compete. Their findings indicated that the contest entry decision mediates the interactive effects of the independent variables on evaluations,

providing support for the proposition that actively competing in a contest is a mechanism by which consumers can repair or enhance their threatened self-regard (Moreau and Herd, 2010). The users impulse to overcome others in terms of designing a product (even if it only means configuring) drives selves to customize it using MC toolkits.

The process of decision making from the predefined choices that the designers provided to users via toolkits creates the sense of control and stronger ownership over the product as well. Franke and Schreier (2010), discuss this effect of MC toolkits on the basis of behavioral decision-making. They suggest a third factor different from the two factors of preference fit achieved (which should be as high as possible) and design effort (which should be as low as possible), namely the awareness of being the creator of the product design. They claim that, this “I designed it myself” effect creates economic value for the customer. Regardless of the two other factors, self-designed products generate a significantly higher willingness to pay. This effect is mediated by feelings of accomplishment and moderated by the outcome of the process as well as the individual’s perceived contribution to the self-design process. Merle, Chandon and Roux (2008), held a study that signified that producers via MC could modify the valorization of their products by increasing the perceived hedonism and creative accomplishment during the co-design experience. In this sense, MC toolkits are successful mediums for producers to create personal (even hedonistic) connections between user and the product. Through the delivery of increased value and by increasing the number of connection points between the firm and consumers, co-creation may strengthen consumer-firm relationships and thereby improve customer equity. (Hoyer, Chandy, Dorotic, Krafft and Singh, 2010) Including the user in the creation process of a product generates more value both in terms of commodity and also in terms of users satisfaction because of the connection between the user and the object. Participating users attribute a high value increment to their own design activities (Piller, 2004).

By all means of motivation, MC increases the commodity value of the product too. In the research held by Merle, Chandon and Roux (2008), more than 73% of respondents were prepared to pay a premium for the mass-customized product. These results reinforce those from previous studies suggesting that between 60 and 88% of consumers had a positive willingness to pay. In Schreier’s studies, value increment

of the scarf toolkit added up to 106%, the cell phone cover toolkit produced a users willingness to pay of 204%. Since these researches show how people seek a personal kind of connection with the products, improving the MC toolkits towards a more mechanical and tactile experience may result in even more value increment.

### 3.2 Examples

MC, on most products is usually held via toolkits on Internet. Personalization occurs before the purchase on a virtual platform. Nearly all automobile producers provide these online configurators but with very few options. Some vehicles are designed with the consideration to use the configurators to their full extend. On these cases the automobiles are marketed as the vehicles that can be personalized fully. Two of most popular vehicles marketed with the help of MC can be considered as Mini and Fiat 500. Both their claims are to give the user immense control over the design decisions of their vehicles. On the Figure C.3.1, there is an Internet advertisement of Fiat 500. The taglines say: 'Fiat 500, your twin brother in terms of style.' 'More than 500.000 personalization options.' and 'Your Design, Your Style.' All these slogans try to promote the vehicles openness to personalization. They give the message that this particular vehicle can be customized to a point that it can even be stated as designed by the end-user, him/herself.



**Figure 3.1 :** Fiat 500 internet advertismnt, Url-2.

Also, the intro page of the MC configurator of Fiat 500 as can be seen on the Figure 3.2 below, open with the phrase: "There are times in your life when you have to make a choice." And continues with the phrase "There are other times when you can make over 500,000 choices." On the Figure 2.3. The number 500,000 is achieved by combining all possible customization options. Considering even every small sticker is included in this calculation, the level of user involvement cannot be noted as high

as stated. Nevertheless, the company is trying to achieve the feeling of rareness and even uniqueness via that slogan and the options on the toolkit. In 2011, Fiat sold around 20,000 units in the United States (Url-3). In that sense, if each user customized their vehicles before retail, no single Fiat 500 would be same on the roads of US. The same scenario can be told for Mini too. The loading screen of Mini's configurator is even more pretentious (Figure 3.4) with the claim of 10 million possible combinations. These possible combinations are achieved the same way as with Fiat 500. With every single option provided, the number of combinations increase exponentially. Still, these numbers are to back up the idea to make users feel unique. The graphics of Mini's configurator also supports this theme too. As can be seen on the figure C.3.4, as the application is being loaded, many small boxes of different color are flowing into the configurator, symbolizing the many options that will be available to the users when the loading is completed. In this situation, the state of waiting works to support the idea of purely individual vehicles that is to be created via MC toolkits provided by the designers with options designed beforehand.



**Figure 3.2:** Fiat 500 Configurator, Url-4.



**Figure 3.3** : Fiat 500 Configurator 2, Url-4.



**Figure 3.4** : Mini Configurator, Url-5.

The configurator of Fiat 500 allows you to choose between different set of options. It proceeds by steps of different categories on the exterior of the vehicle; colors





created on a computer. By naming, it becomes more real and solid for the person who customized it. It is even like parents naming their creation. After the naming stage, the customer can either get a detailed summary and/or print for ordering. Also the customer can send it to a friend to share it and show self's abilities on a creative process. This sharing stage of the application provides user motivation related to conspicuous consumption.



**Figure 3.8:** Fiat 500 Configurator 6, Url-4.

Mini has very similar categories on its MC toolkit as can be seen on Figures, 3.10, 3.11, 3.12 and 3.13 but with broader options. The user is free to choose also the roof color, different textures and patterns on the interior surfaces and upholstery, more option of colors, wheels and stickers as well. Therefore Mini's configurator can be defined as a more improved version of the Fiat 500's one. Predefined parts still strictly control the user involvement but variety in different options enrich the 'I designed it myself' effect.

As on these examples, MC toolkits offer options to customers that are pre-set by designers of the companies. The users do not have actual control over the design, in fact they only chose from the given limited options. In terms of creative involvement, the MC toolkits are often far from letting the users make decisions. By supplying

different small choices, the illusion of control is achieved. But this illusion only helps to create a rather weak and virtual bond between the user and the product.

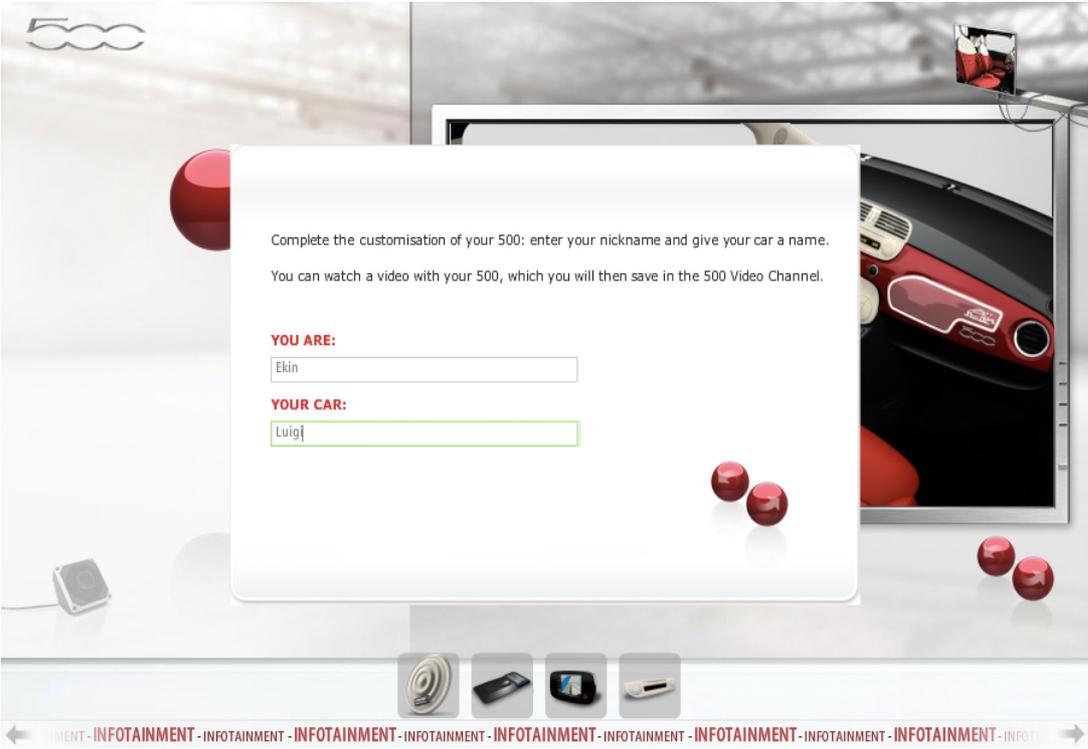


Figure 3.9: Fiat 500 Configurator 7, Url-4.

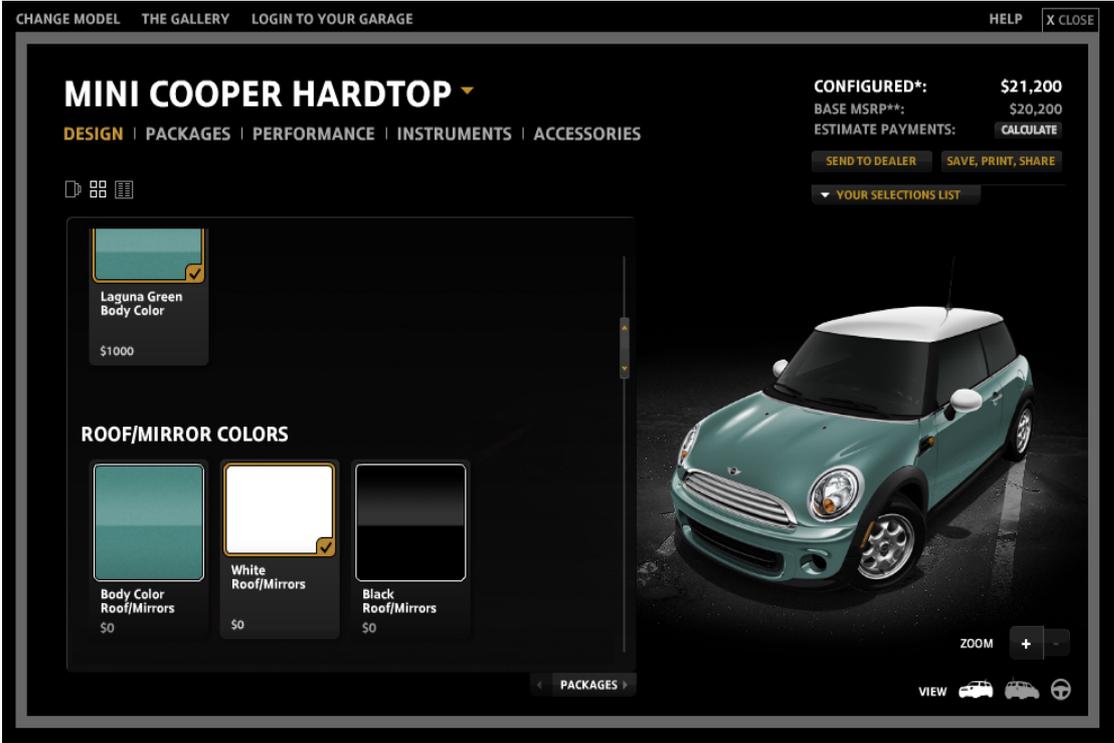


Figure 3.10: Mini Configurator 2, Url-5.

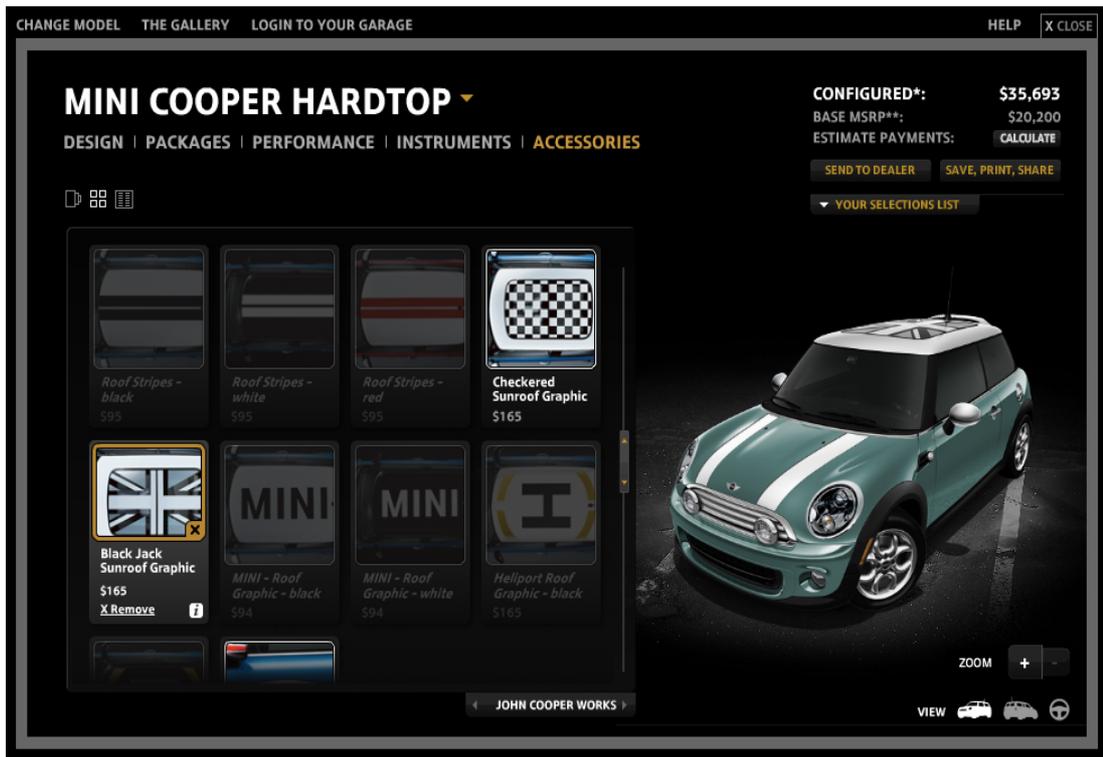


Figure 3.11: Mini Configurator 3, Url-5.

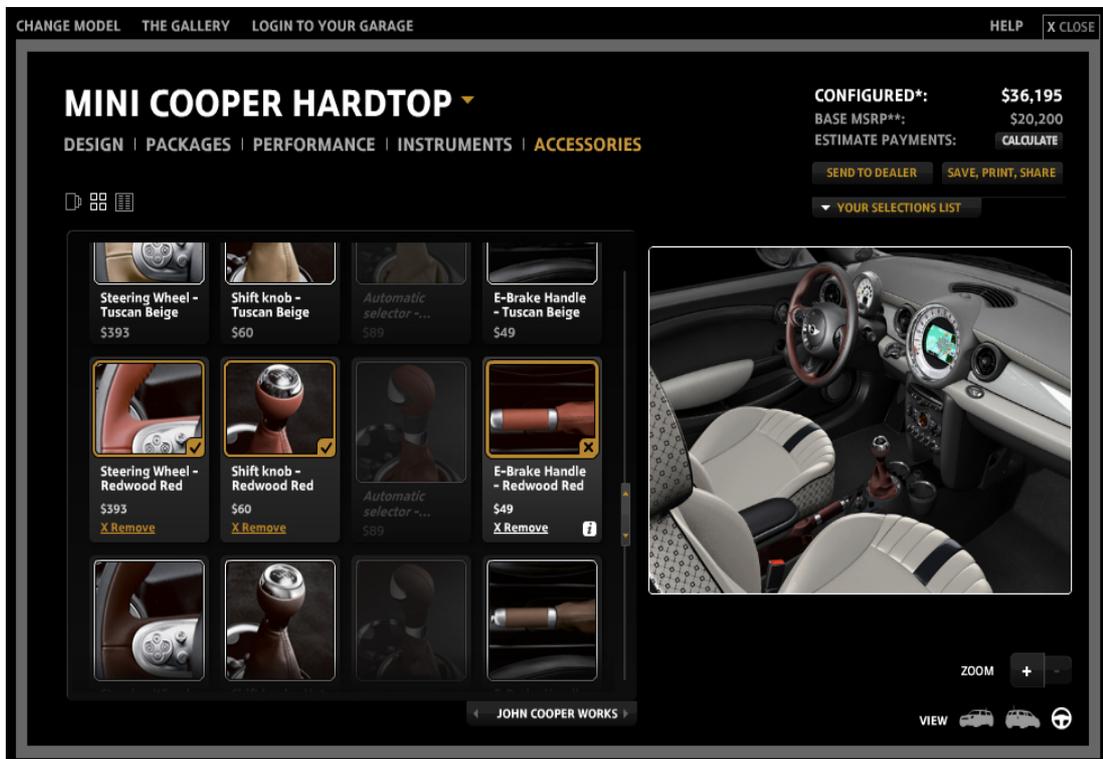


Figure 3.12: Mini Configurator 4, Url-5.

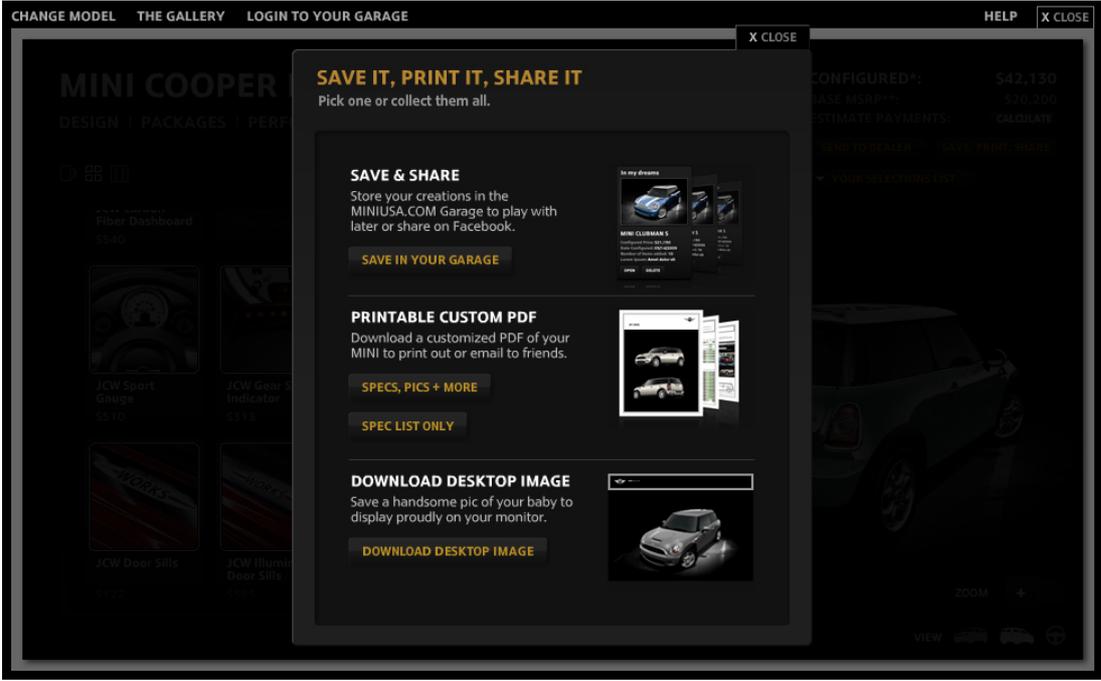
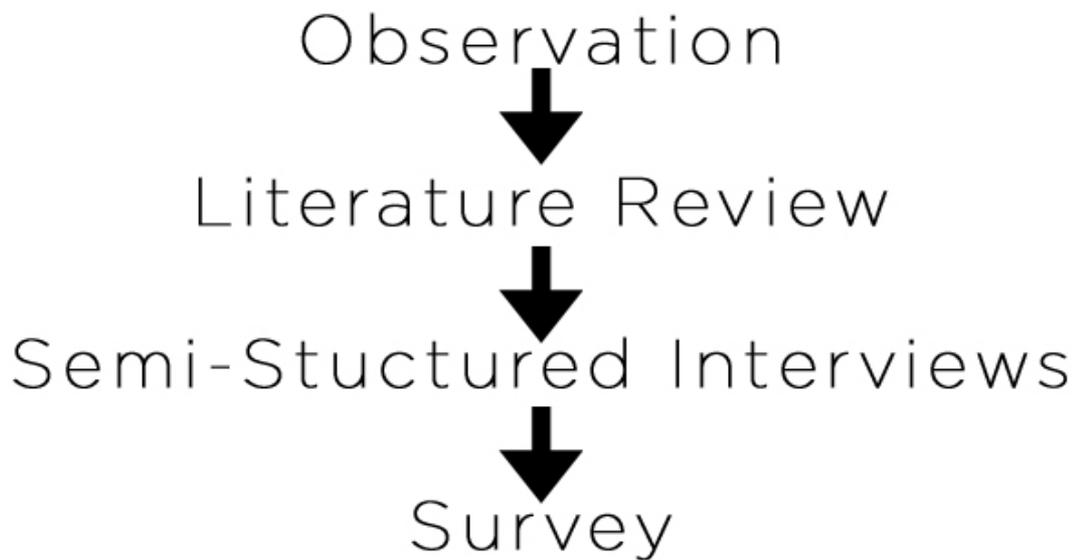


Figure 3.13: Mini Configurator 5, Url-5.

## 4. RESEARCH

The research is held in 4 different stages that can be seen on the below Figure 4.1. These stages are observation, literature review, semi-structured interviews and a survey.



**Figure 4.1 :** Workflow of the Research.

### 4.1 Ethnographic Research

In order to gather information about aftermarket modified automobile users an ethnographic research was necessary. So, as the first step of the research after observation, semi-structured interviews are held with 10 different modifiers. During these interviews held on the industrial site Şaşmaz in Ankara, Turkey, also their behavioral patterns, and vehicles are observed as well. These interviews and observations gave a general understanding about the phenomenon of modification on Turkey. Also, with the help of these interviews the survey questions are formed. Also to broaden the research the websites and forms of aftermarket automobile users are studied. From these sites, their senses of community, social relations and the

modifications on their vehicles are found additional to the information gathered from the interviews. Figures 4.2, 4.3 and 4.4 are from the interviews in Şaşmaz.



**Figure 4.2:** Modified, 1998 Peugeot 106 Gti, Şaşmaz, Ankara 21.12.2010.



**Figure 4.3:** Modified, Citroen Saxo VTS and Peugeot 106 Gti, Şaşmaz, Ankara 21.12.2010.



**Figure 4.4:** Modified, Peugeot 106 Gti, Şaşmaz, Ankara 21.12.2010.

By only changing a few parts, they give it a whole different appearance. They personalize and nearly recreate the product. On the figures 4.5, 4.6, 4.7 and 4.8 the stock and modified versions of the same model Opel Vectra are shown. This is a real example of user interpretation in aftermarket modification. The modifier changed the vehicle, which was a family saloon car into a car that looks more aggressive and more like powerful. In this case, the user wanted a more bold and masculine appearance. He changed the front and rear bumpers, side skirts, bonnet, rear fenders, wheels, headlights and taillights and added a rear spoiler. All these changes are on the exterior body of the vehicle, therefore only a few parts are changed but the appearance of the product is exceptionally different from the stock version. MC toolkits have the potential to offer personalization on higher levels by including options such as these. The broadening of options could be able to increase the effectiveness of the personalization of the product.



**Figure 4.5** 1998 Stock Opel Vectra B.



**Figure 4.6:** 1998 Modified Opel Vectra B.



**Figure 4.7:** 1998 Stock Opel Vectra B.



**Figure 4.8:** 1998 Modified Opel Vectra B.

Selim, one of the 106 Gti owners stated that: *“I’m working on this car for 2 years now and I can say that it is nearly finished, but I am still considering a few changes. Before this car, I had a turbo charged ‘Şahin’ and we used to race with BMW’s which happen to be much more expensive.”* At the same time, Ahmet who is a Peugeot 106 Gti modifier talks about this subject: *“I would want to buy a much more expensive car but I cannot afford to. Instead I can compete with more expensive cars on the road with these modifications in my car.”* These quotes from the interviews show their impulse to compete against conspicuous consumption, their desire to beat expensive cars with less money. Also Selim’s statement about how his car is unfinished shows the continuity of the process to modify as well.

Another modifier said: *“If he were a real person? I’d register him as a member of my family. We are that close. I have a little son and he is even more enthusiastic about the car than me. He is like a brother to me and I’d never ever think of selling him.”* Even though it is not popular, and can be better described as a subculture, aftermarket automobile modification is the ultimate form of this search for a real relation between human and machine. It shows that if people were let to interfere and interact with their vehicles more, they would grow more of an emotional bond. If the automobiles were designed in a way that would allow the users to understand the vehicle more, if they contained traces and marks of its production people would be more likely to connect. Some producers such as General Motors are aware of this search. Therefore they started offering their iconic sports car Corvette with an option. If a customer is willing to pay \$5,800 more, he/she will be invited to come to Wixom to assemble the engine for their car under the guidance of GM technicians. This is a perfect example of how carmakers can turn this need into profits. These kinds of applications can strengthen the bond between car and driver as well.

Many groups that modify their vehicles gather occasionally to have social meetings. One of them is BMW Team in Turkey. The figures 4.9 and 4.10 are from their meeting in Bahçeşehir İstanbul. These meetings demonstrate the social aspect of car modification. The display value of the personalized vehicles’ are shared with other people from the group for the sake of conformity.

Also as seen on the figure 4.10, they often interfere with their automobiles in terms of mechanical and electronic ways. Modifiers share the experience of mechanical relation with the automobile in a social scene. They do like to be able to change,

modify and personalize their vehicles on their own. They feel more competitive because of these abilities too.



**Figure 4.9** : BMW Team 2011-09-25 Bahçeşehir Gölet Meeting 1.



**Figure 4.10** : BMW Team 2011-09-25 Bahçeşehir Gölet Meeting 2.

During the ethnographic research it is confirmed that the subculture of aftermarket automobile modification shows users pursuit for a more personal kind of connection with their vehicles. Also, modifiers are motivated with the possibility to compete

with automobiles with higher prices as well. Finally, it is seen that the phenomenon of aftermarket automobile modification is lived on a very social context.

## **4.2 Survey**

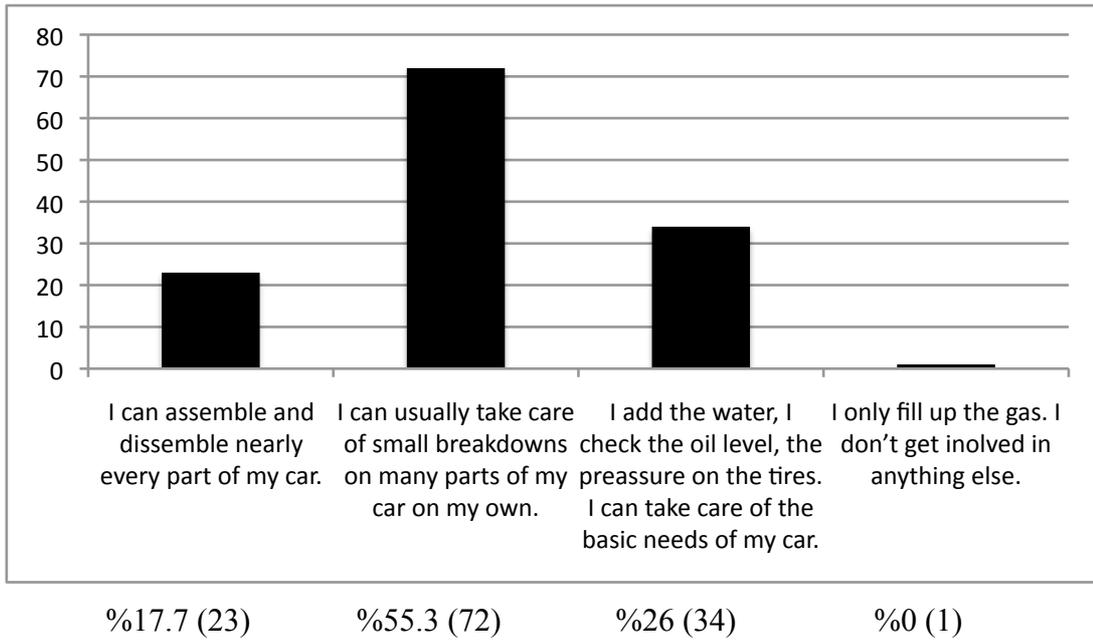
After conducting semi structured interviews with modified vehicle owners in order to shape a general understanding and to collect quantitative information of the subculture of automobile modification, a survey is designed to gather quantitative data. Their input, motivations and applications and the dimensions discussed before on the part '2.3 A Model of Product Personalization', shaped the questions of survey.

Two surveys are held in order to be able to compare the motifs of aftermarket automobile modifiers with the ones of mass customized automobile users. The sample group for the mass customized automobile users is chosen as MINI and Fiat 500 users. 130 people participated in the modified automobile user survey and 28 people participated in the mass customized automobile survey.

The results of the first question as can be seen on the tables 4.1 and 4.2 can be considered as expected. The modified automobile users are mechanically more able with their cars and as a result more involved with their cars. Most of the modified vehicle users are able to take care of small breakdowns on many parts of their cars. On the other hand, mass customized automobile users tend to be a bit more distant with their vehicle with the majority stated that they only check the oil and water of the engine.

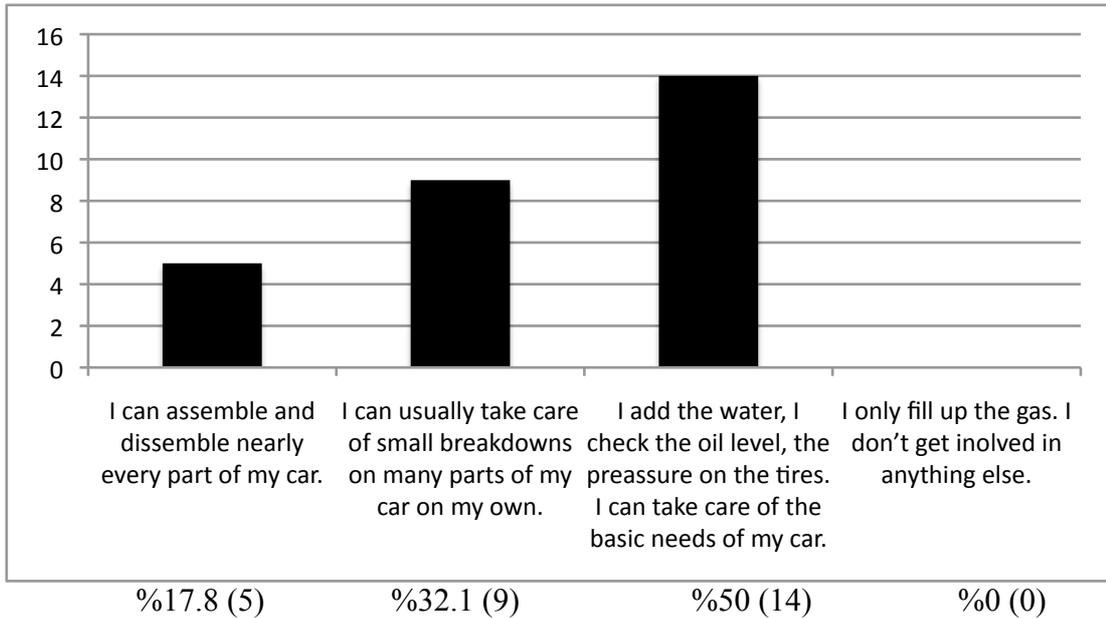
The second question was aimed to reveal people's involvement in other mechanical processes like small repairs at home. The results are on tables 4.3 and 4.4. Even though modifiers tend to be more able at repairing, they are not particularly interested in it like in their automobiles. The reason behind this less difference in motivation is that people are not interested in everyday objects at home that are not special as a car for their users, which doesn't reflect people's personality or it does not have any representative role in people's social life. The handcraft connection between object and individual is much stronger if the object has to ability to perform on behalf of the user. As a result of this, there is a larger difference on the user involvement between two groups.

Question 1: How can you define the level of involvement of yourself with your vehicle?



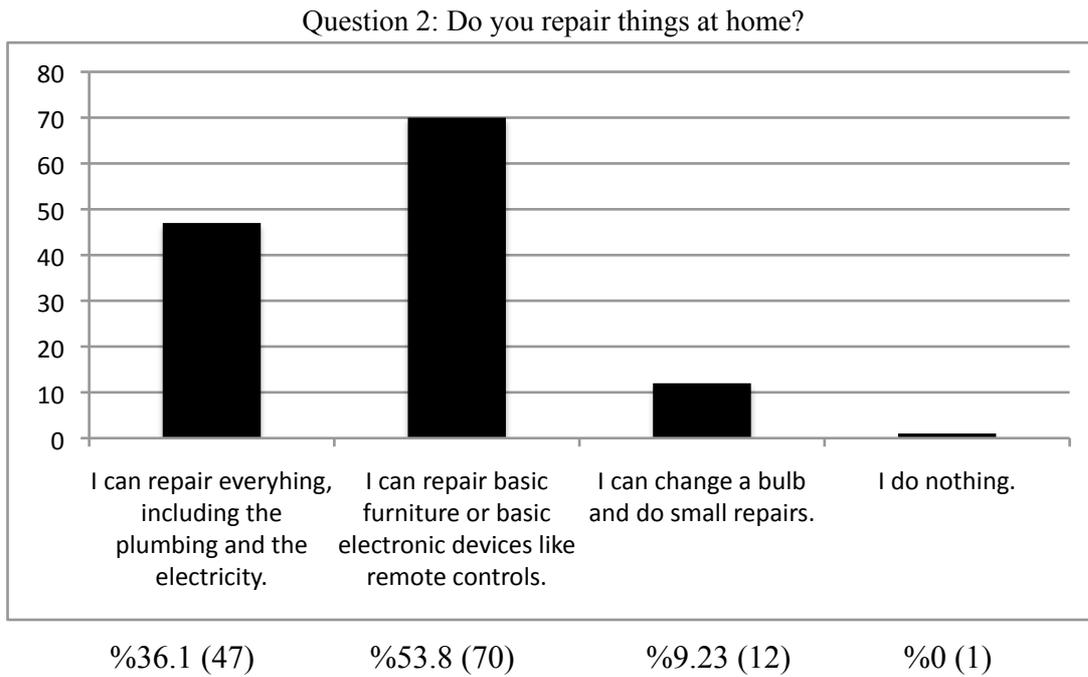
**Figure 4.11 :** The answer distribution of modified automobile users.

Question 1: How can you define the level of involvement of yourself with your vehicle?

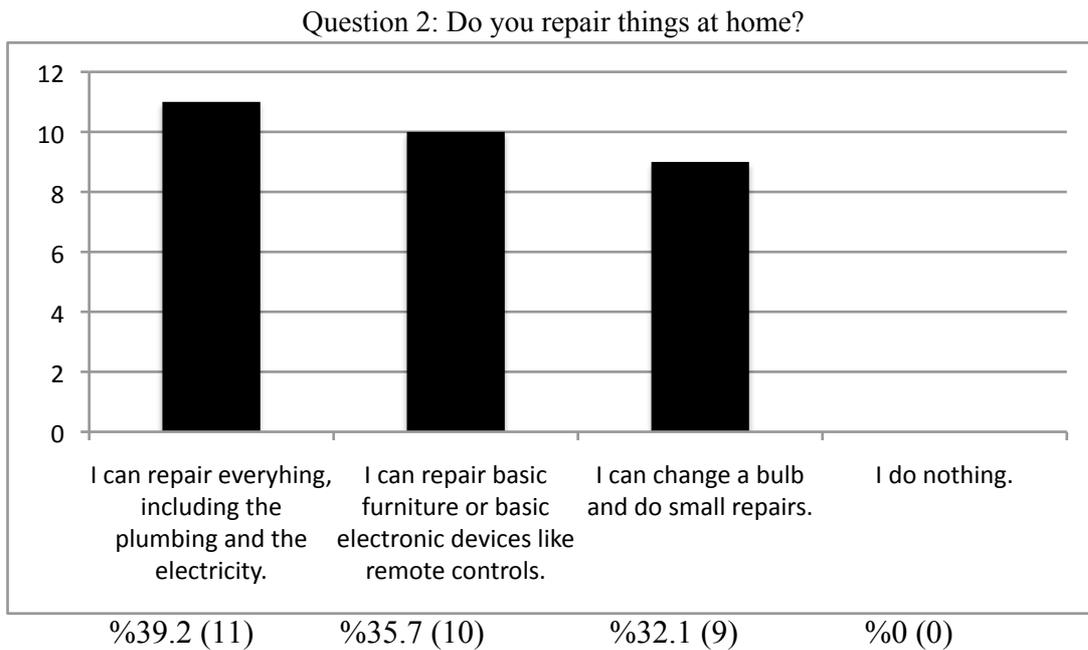


**Figure 4.12 :** The answer distribution of mass customized automobile users.

The results of the third question that can be seen on tables 4.5 and 4.6 can be defined as unexpected. While the results of two groups are really close, and most of them claim to drive fast as long as it is safe, in reality while traveling on the passenger seat of vehicles from both groups, it has been observed that the modifiers are not being exactly honest in this question.



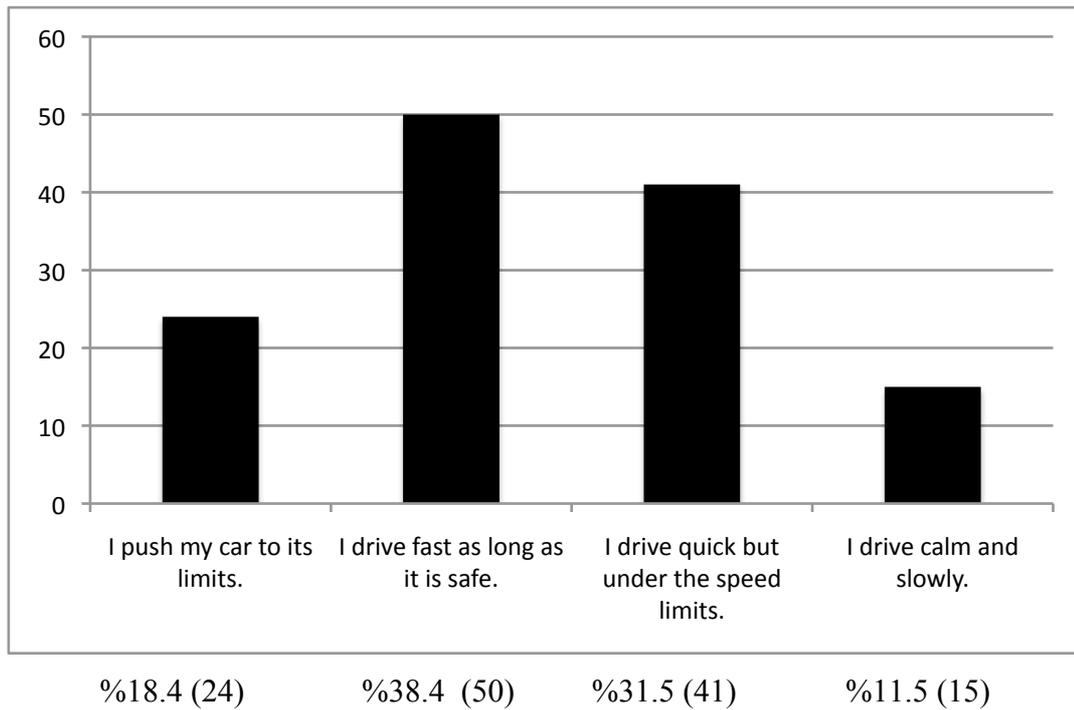
**Figure 4.13 :** The answer distribution of modified automobile users.



**Figure 4.14 :** The answer distribution of mass customized automobile users.

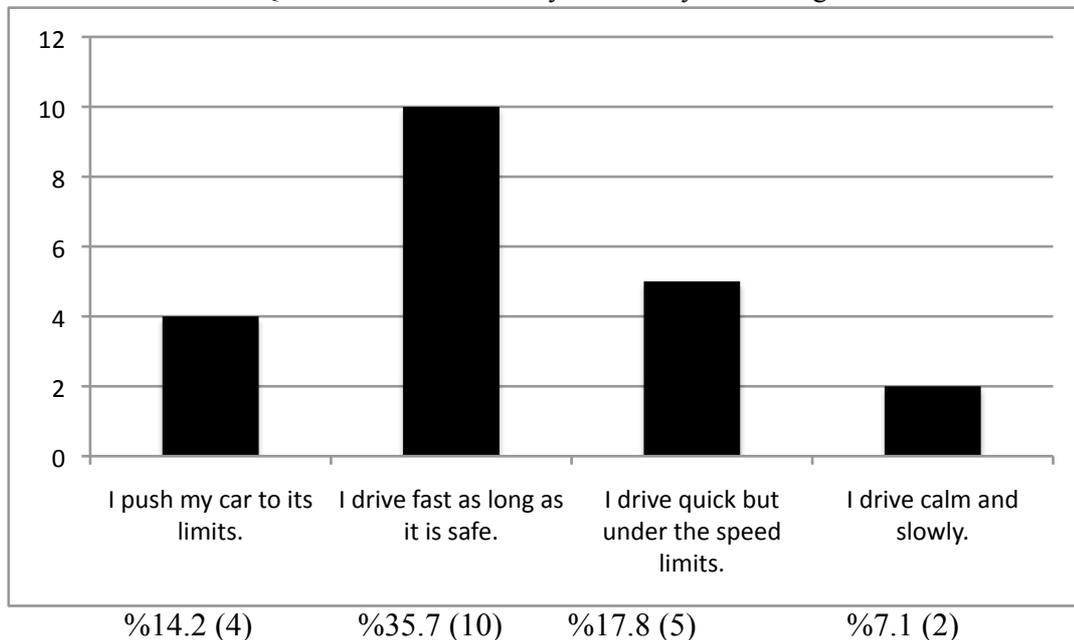
Mostly they drive more close to the limits of their vehicles. Nonetheless, they are not always pushing their cars. The difference is that modifiers are more open to discover the actual limits of their vehicles whereas, if compared, mass customized automobile users are usually calmer.

Question 3: How would you define your driving?



**Figure 4.15 :** The answer distribution of modified automobile users.

Question 3: How would you define your driving?

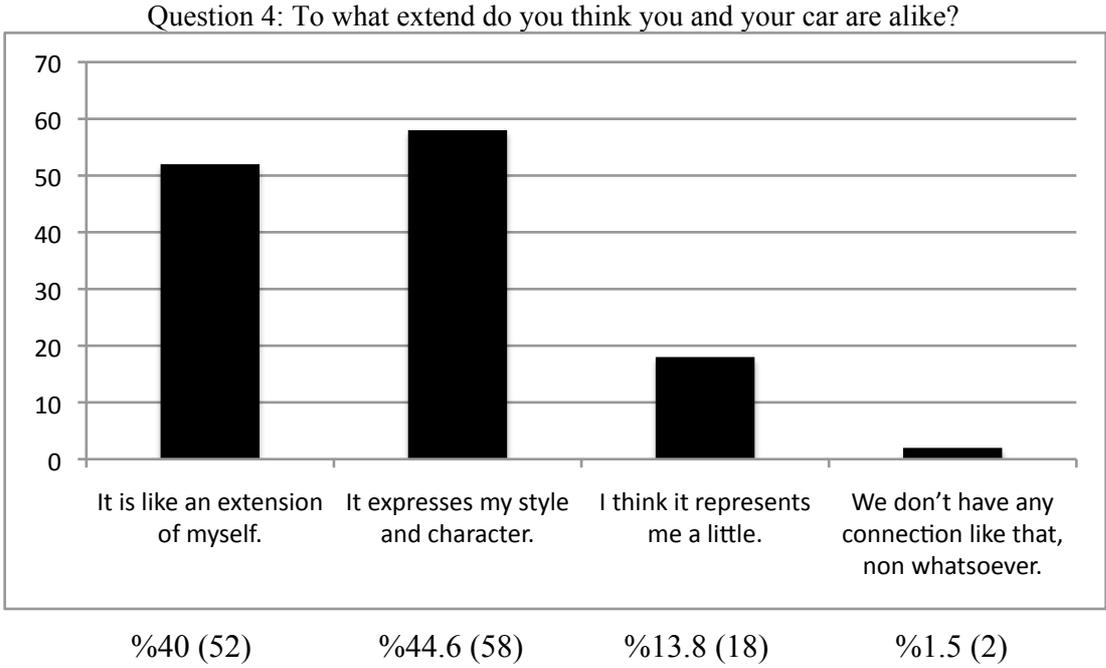


**Figure 4.16 :** The answer distribution of mass customized automobile users.

This situation suggests that modifiers are trying to get more information about their vehicles. They are interested in how their cars would react on their limits, when they're pushed. In that sense they're more in connection with the object and more in control of them. The theme of control also contains the meaning that the drivers of

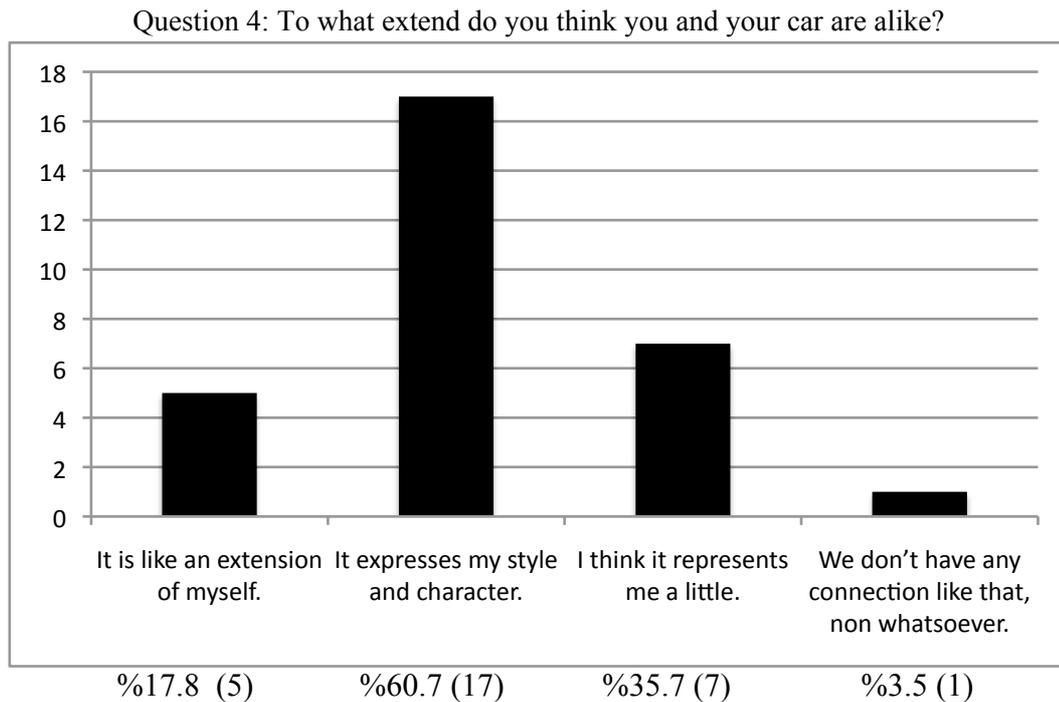
powerful modified vehicles are more able since they're capable of managing a great power. This motivation drives them to discover the limits of their automobiles and while doing so increases the level of involvement of the user with the object.

On the fourth question, the results that can be seen on tables 4.7 and 4.8 are as expected. A very large portion of the aftermarket automobile modifiers see their vehicles as an extension of themselves due to the higher level of involvement.



**Figure 4.17 :** The answer distribution of modified automobile users.

When it comes the cases of mass customized vehicles, Even though there are no solid connections between cars and their owners, they still have a strong but abstract connection, in which Mulvey's definition as disavowal of the actual solid traces of production occurs. A very large portion of them stated that those vehicles express their style and character. This is not an unexpected result either. Since the mass customized vehicles are marketed as more of exclusive small vehicles, which can come in endless combination of options and that are 'special' to each user, the owners inevitably feel the connection. This process of building an abstract connection takes place through choosing a sticker to be applied to the surfaces of their cars or a color to their wheels. It is a constructed connection that still neglects the human traces of the produced good, but nevertheless it can be considered as a success of marketing and design to make an automobile more desirable.

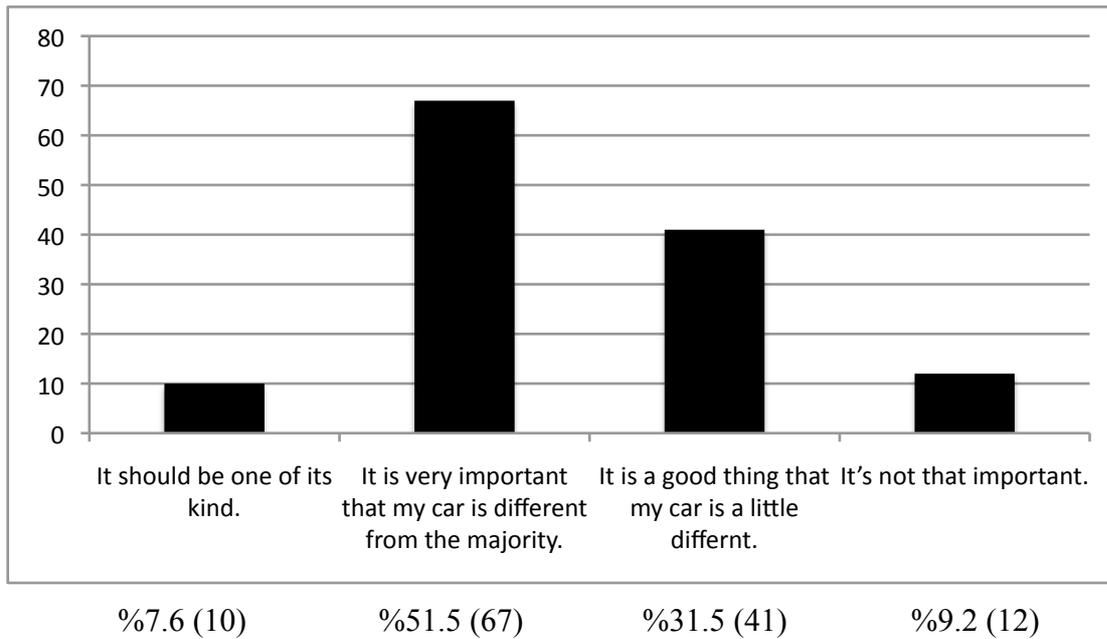


**Figure 4.18 :** The answer distribution of mass customized automobile users.

The answers given to the fifth question that can be seen on the figures 4.9 and 4.10 are somewhat unexpected as well. Participants in both groups think that it is very important that their cars are different from the majority. However, the people who think their rides should be one of its kind are considerably more in mass customized vehicle users. This result shows us how successful the marketing and design strategies of them are. Even though there is no solid connection whatsoever between the produced good and the user, they still feel they are in control and feel their vehicels are unique to themselves. Also, the fact that the modified automobile users are not so enthusiastic about their cars being one of its kind, demonstrates that they still want to be perceived modest even if their cars state otherwise. They want their vehicles to represent themselves but they also need to them to be self-explanatory.

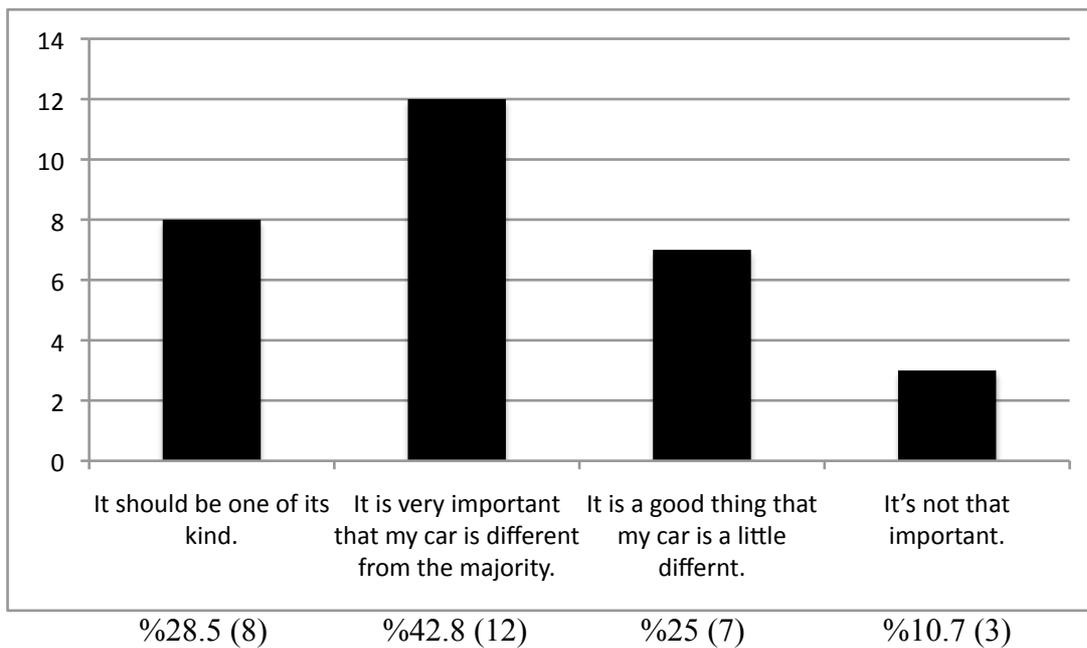
The results of sixth question (Figures 4.11 and 4.12) reveals the after market modifiers' motivation to be process focused. They don't think that their vehicles will be complete at any point. It is as collecting, never complete. The modifiers don't do it to achieve a complete end product. They are more motivated with the progression on their automobiles with time.

Question 5: With all the customization on your car, how important for you that your car stands out from the crowd?



**Figure 4.19 :** The answer distribution of modified automobile users.

Question 5: With all the customization on your car, how important for you that your car stands out from the crowd?

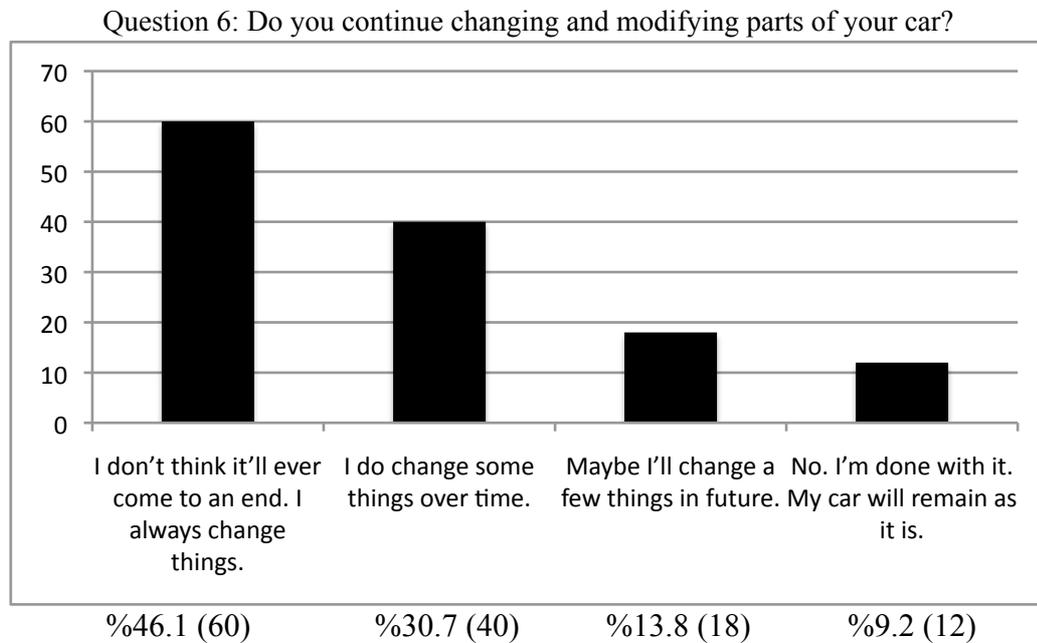


**Figure 4.20 :** The answer distribution of mass customized automobile users.

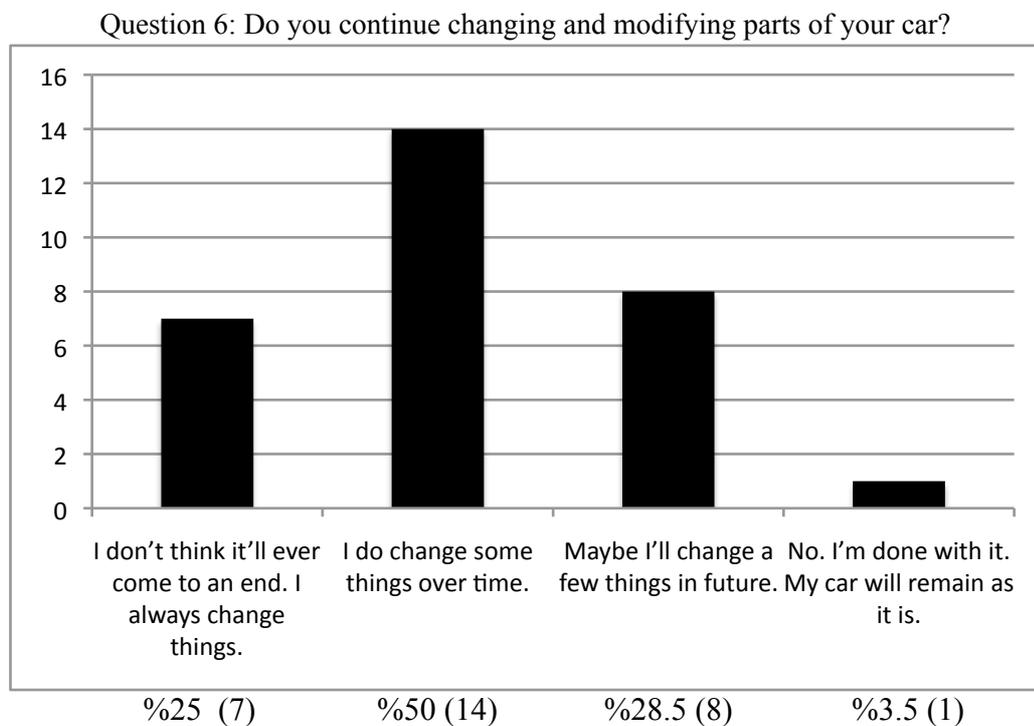
The interesting part is that most of the mass customized automobile users stated that they'd do some changes with time too. Their motivations are somewhat different though. The changes they made are not progressive. They do change things when they get bored of a completed state whereas the modifiers change constantly, never

reaching a finalized condition. Also, both sample groups want change every now and then even as small alterations.

On the seventh question, (Tables 4.13 and 4.14) participants from neither group like the idea to lend their vehicles to someone. In most cases they were willing only if they know and trust the person they're going to lend it to.

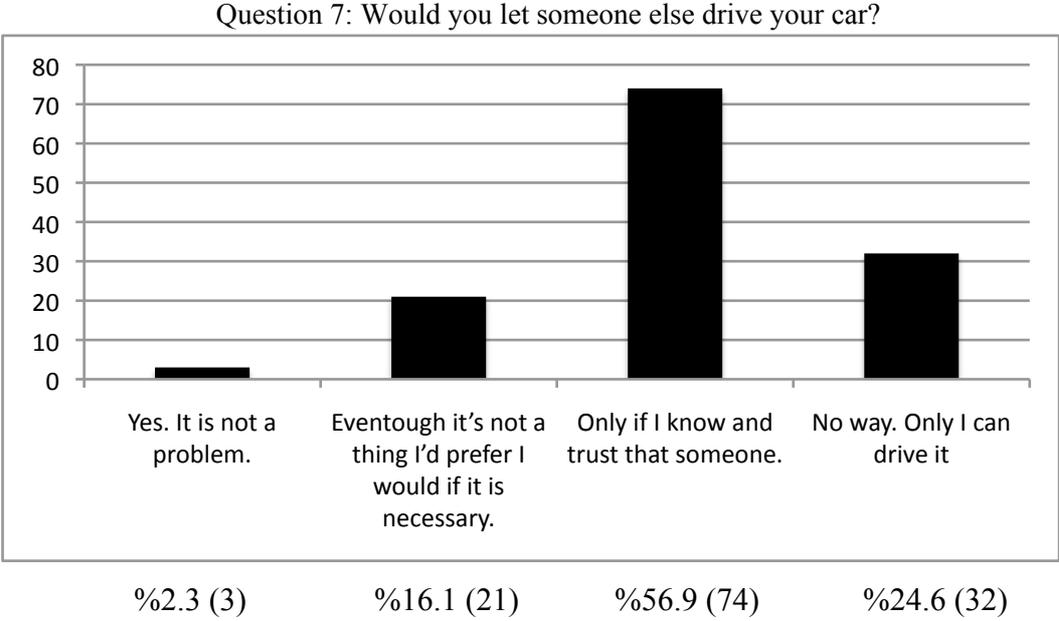


**Figure 4.21 :** The answer distribution of modified automobile users.

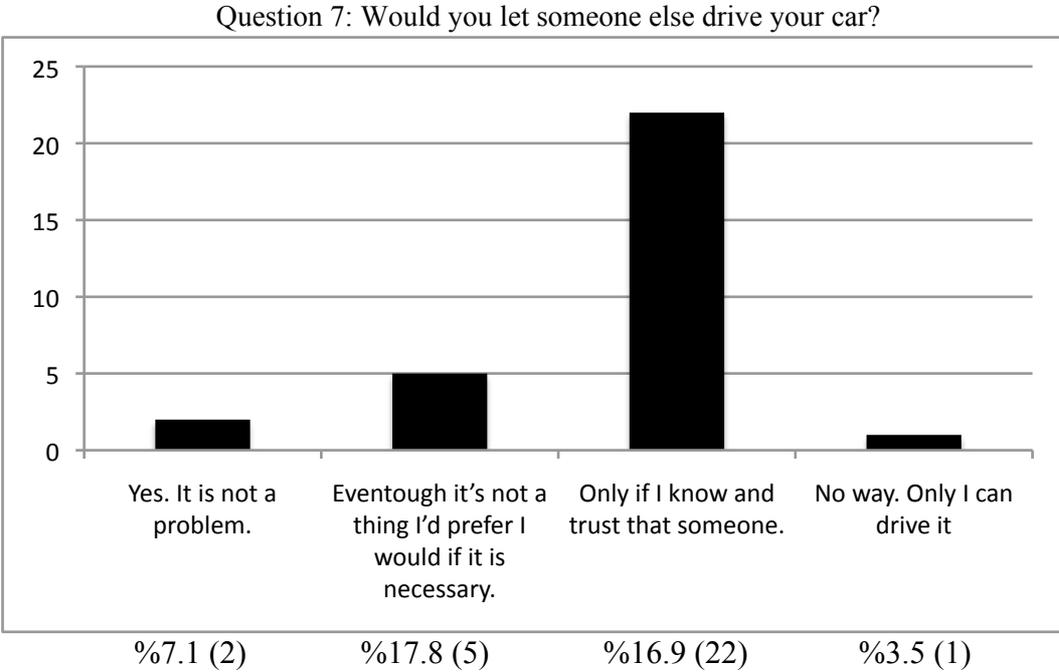


**Figure 4.22 :** The answer distribution of mass customized automobile users.

The reason behind is that for both groups, their vehicles are highly personal. The only difference is that more aftermarket modifiers responded in a totally rejecting manner. The reason behind that might be the more real and mechanical connection between the user and the vehicle.



**Figure 4.23 :** The answer distribution of modified automobile users.

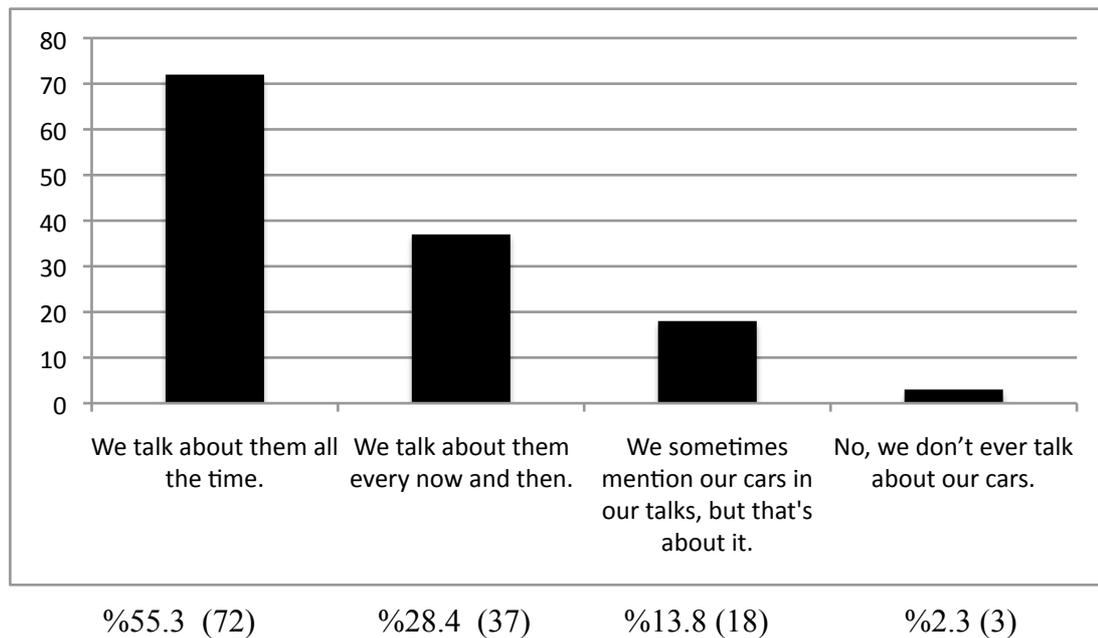


**Figure 4.24 :** The answer distribution of mass customized automobile users.

About vehicles being a social mediator, on the eighth question (Tables 4.15 and 4.16) both participant groups told that they do talk about their automobiles with their

friends. This was the question that both groups responded nearly similar. In order to feel connected with the object, people from both groups talk about their cars on their social environments. However, the aftermarket automobile modifiers do have some clubs that are based on their interests in their automobiles. They use forums in Internet to communicate. Consequently they are more like a community shaped around their enthusiasm compared to mass customized automobile users. Their active use of forums is also the reason that the participants on the modifier group are much higher.

Question 8: Do you talk about your cars with your friends?



**Figure 4.25 :** The answer distribution of modified automobile users.

Despite the fact that usually patterns of aftermarket modifiers and MC automobile users are inclined to be at the same direction, the aftermarket modifiers are closer to be more radical about personal involvement. Their interventions can be often defined as hacking because of their attempt to create their own brand by changing the vehicle itself. Nevertheless, these results show that MC can benefit from aftermarket modification in order to improve the relation between the automobiles and customers.

Question 8: Do you talk about your cars with your friends?

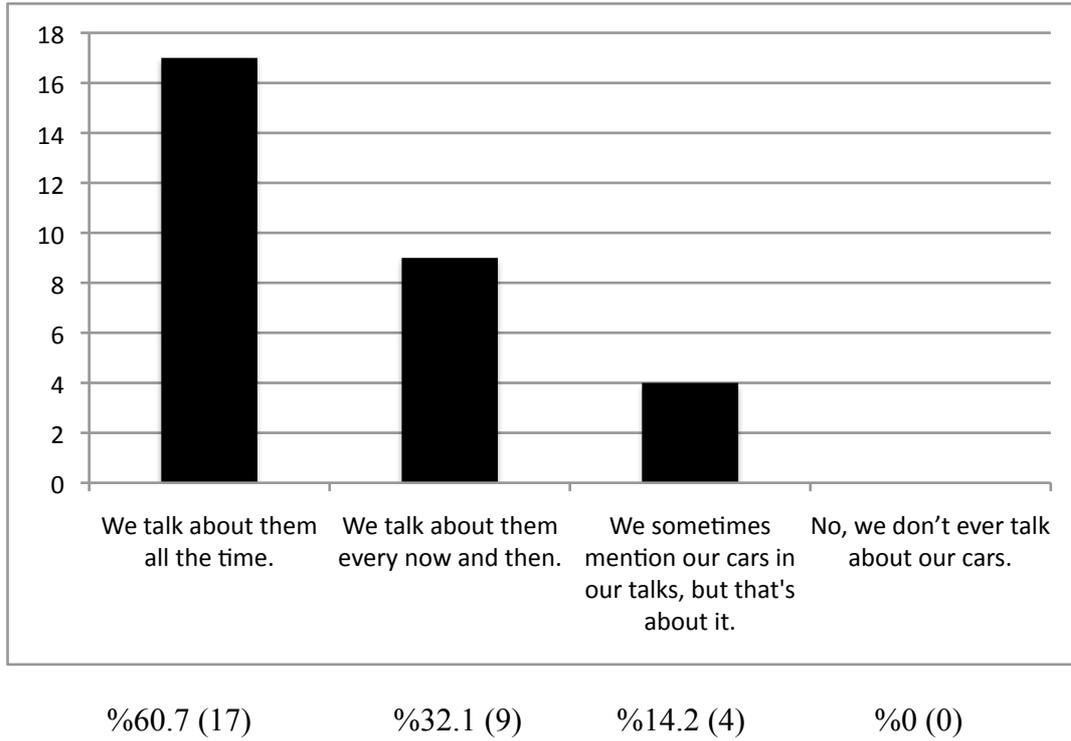


Figure 4.26 : The answer distribution of mass customized automobile users.

## 5. DISCUSSIONS

After conducting an ethnographic research and a survey, different aspects of automobile modification and MC are revealed. In order to discuss and classify these findings, the categorization of Mugge, Schoormans, Hendrik and Schifferstein is adopted to the subject of this study . The model that is explained before, categorizes different types of product personalization and it constitutes a well model that can be applied to the discussion about automobile personalization.

### *a. Mental Effort*

The dimension of mental effort is the amount of design involvement of the user. When look at MC in automobiles, all the choices that are offered to the consumer are already designed. The act of choosing gives the user a certain amount of control over the product but the mental effort is still not as high. On the other hand personalization in the case of aftermarket-modified automobiles requires a much higher level of control over the product and mental effort to support it.

- Options to change the front and rear bumpers, side skirts, bonnet, rear fenders, wheels, headlights and taillights and added a rear spoiler can change the appearance of a vehicle making it a fully personalized product.
- Different options supported by aftermarket part producers can be introduced to the online configurators.
- In the future, 3d printers may be used in coordination with these toolkits to produce unique parts for each user. By the high level of personalization mental effort would rise.

### *b. Physical Effort*

The dimension of physical effort suggests the users role on the production or assembly. The aftermarket automobile modifiers generally use ready parts to personalize their products. They often prefer to be able to change these parts themselves too. Therefore, they are physically more involved with their vehicles. They are also mostly in control of the mechanical parts of the automobiles. They know how each piece works with the other parts together. Therefore this physical

effort that the users of aftermarket modifiers afford also can be referred as a counter behavior against the created automobile fetish. But in fact this physical involvement fetishizes the object on the opposite direction by improving the connection between the user and the automobile. On the other hand mass customized vehicles are more like the cellphone example. They are mostly personalized on the toolkits online and produced by other people for the end user. The MC automobile users are significantly less willing to spend physical effort compared to aftermarket modified automobile users. Nevertheless there are still aspects that can be derived from physical efforts of aftermarket modification.

- Users may choose to participate on workshops to understand the mechanical qualities of their vehicles.
- The details to conceal mechanical parts may be removed in order to allow users see how to physically interfere with their vehicles.

### *c. Flexibility*

The dimension of flexibility is the products willingness to change according to time and users needs. In automobile modification, one of the most persistent user patterns is that its constant change. The modifiers nearly never reckon their vehicles as complete. So, they never stop changing their cars. They are able continue this pattern because of their vast choice of aftermarket parts that are available nearly for every model of every carmaker. Also with a higher price, a consumer may choose to completely redesign some parts of the vehicle with fiberglass parts. At the same time, if wanted it is very easy to change the vehicle to its original state. Aftermarket car modification offers a vast range of parts and flexibility for their users. The MC automobile users are offered many options to personalize their cars too. And they are also free to change them over time as well. But in reality, once their cars are personalized, generally it is done. The user changes the vehicle less often. They are not especially encouraged to constantly change the vehicle too. Because of their lower physical involvement with the vehicle, it is more difficult for MC automobile users as well.

- Different options supported by aftermarket part producers that are introduced to the online configurators would increase the level of flexibility immensely.

- Newsletters about new options of personalization would update the users for further flexibility and change.

#### *d. Initiation*

The initiation dimension is the criteria of whose in charge of the personalization process. While personalization in aftermarket automobiles are initiated more by the user, in MC automobiles, the designers initiate personalization more. Even though in aftermarket modification the parts are mostly mass-produced and predesigned, the user has more options, and very high possibilities of combination of different parts, so the process is more user-initiated. Also, the user intentionally changes the standard produced appearance and technical qualities of a product. In MC automobiles the choices are limited to a certain producers specific parts that are offered. These parts are predesigned as well and the options are very limited compared to aftermarket parts. The illusion of user-initiation is created in the MC toolkits. The consumers feel they are in control of the product and they make the choices. But in fact all the parts are customizable are initiated by the designers.

- With the help of more parts that are defined by the user, initiation level of the designers would be shifted to the users.
- Aftermarket producers can seek ways to produce parts that are user initiated as well.

#### *e. Performance*

The dimensions of performance is divided as utility and appearance. In the aftermarket modified vehicles, the engine modification to increase mechanical performance can be seen as a utility related goal. The changes on the outer surfaces and the interior of the vehicles can be considered as appearance-related goals for personalization. Although there are plenty of vehicles that are personalized only with appearance-related goals but no utility is changed, the opposite is quite rare. In aftermarket modification, there could be more dimensions that are to be taken into consideration. Modifiers usually change the exhaust and the music system of the automobiles, which do not necessarily improve the products utility functions (The exhaust usually changes performance, but it is barely noticeable to take into account). A new exhaust or a music system is merely an appearance-related modification too. The reason of personalization of these kinds of parts are to personalize the sound of the product. As discussed on part a. Automobiles as

Conspicuous Consumption Goods, by being more loud the automobile stands out from the crowd more. So, the goal is not only utility or appearance related but also multisensory in some dimensions. The option to modify the engine sound of an automobile is not offered on MC automobiles. The personalization on MC cars are more appearance related rather than utility. There are usually different engines offered for different levels of performance needs but these engines are not personalizable. The MC cars allow their users only to change the appearance of their products within the borders defined by the designers.

- Optional different engine sounds and exhaust systems could be offered for auditory performance of the vehicles.
- Users also could be able to change parts that are related to the mechanical performance of the vehicles.

#### *f. Moment of Personalization*

The moment of personalization is the dimension that defines the time of personalization. MC takes place before the order of the product. So it is easier to be adapted for individual's personal preferences. If the user wants to change parts in time, it is possible but not applied much. On the other hand aftermarket modification takes place only after the purchase. So the customer needs to spend extra physical and mental effort to personalize the object.

- The moment of personalization may not be limited to before purchase with a more continuous process of personalization on MC.
- As from the examples of aftermarket modifiers, regular meetings of certain personalized models of MC can be arranged by the producers for introducing further social roles to the vehicles and to expand the moment of personalization to an unlimited time period.

#### *g. Deliberateness*

Deliberateness is the dimension that defines the intention of the users on the personalization process. Both processes of MC and aftermarket modification are deliberate actions. But in some cases of aftermarket modification, the vehicles are lowered too much that they get small damages caused by the bumps on the roads. These damages leave small marks on vehicles. They are not deliberate, but predicted. Also some foil surface finishes are used in order to make the vehicle look like it is

made from different materials such as carbon fiber. This act also deliberately aims to show the vehicle as something that it is not.

The MC automobiles provide great options of personalization and value increment. However at the same time they are still very constrictive. In many aspects of the dimensions discussed above MC can highly benefit from aftermarket car modification. In terms of mental effort, the higher levels of involvement for the consumers would increase the feeling of personalization of the vehicles. The research Mugge, Schoormans, Hendrik and Schifferstein held also shows that there were no personalization options that required a high degree of consumers' mental effort, but only a relatively low degree of physical effort. These options may provide interesting opportunities; designers could search for ways to offer consumers the opportunity to be mentally more involved in the design process, while restricting the necessary investment of physical effort. Such a personalization option will result in a unique and very personal product, whereas the potential problems of physically doing-it-yourself. The higher levels of mental effort can be supplied by adding aftermarket part producers to the MC toolkits. By this way the options of mass customization would increase immensely. Also new parts for vehicles would be available with the help of aftermarket producers. This would keep the car models from aging fast as well. A newsletter (both online and/or printed) could be designed to inform automobile owners about the new parts available each week as well. This information flow can also be supplied by organizing meeting where people would get the opportunity to show to the other people how he/she personalized the product.

In terms of physical effort, not every user like to spend too much time but for the people who actually want to bond with their products in more tactile and mechanical way, workshops could be held, in which these the users would be though how to repair or change their vehicle mechanical abilities and physical parts. Also designing the cars in ways to show more mechanical properties and the signifiers of how they are built would allow the users to understand their vehicles more. Understanding would lead into a emotional connection between the person and the object too.

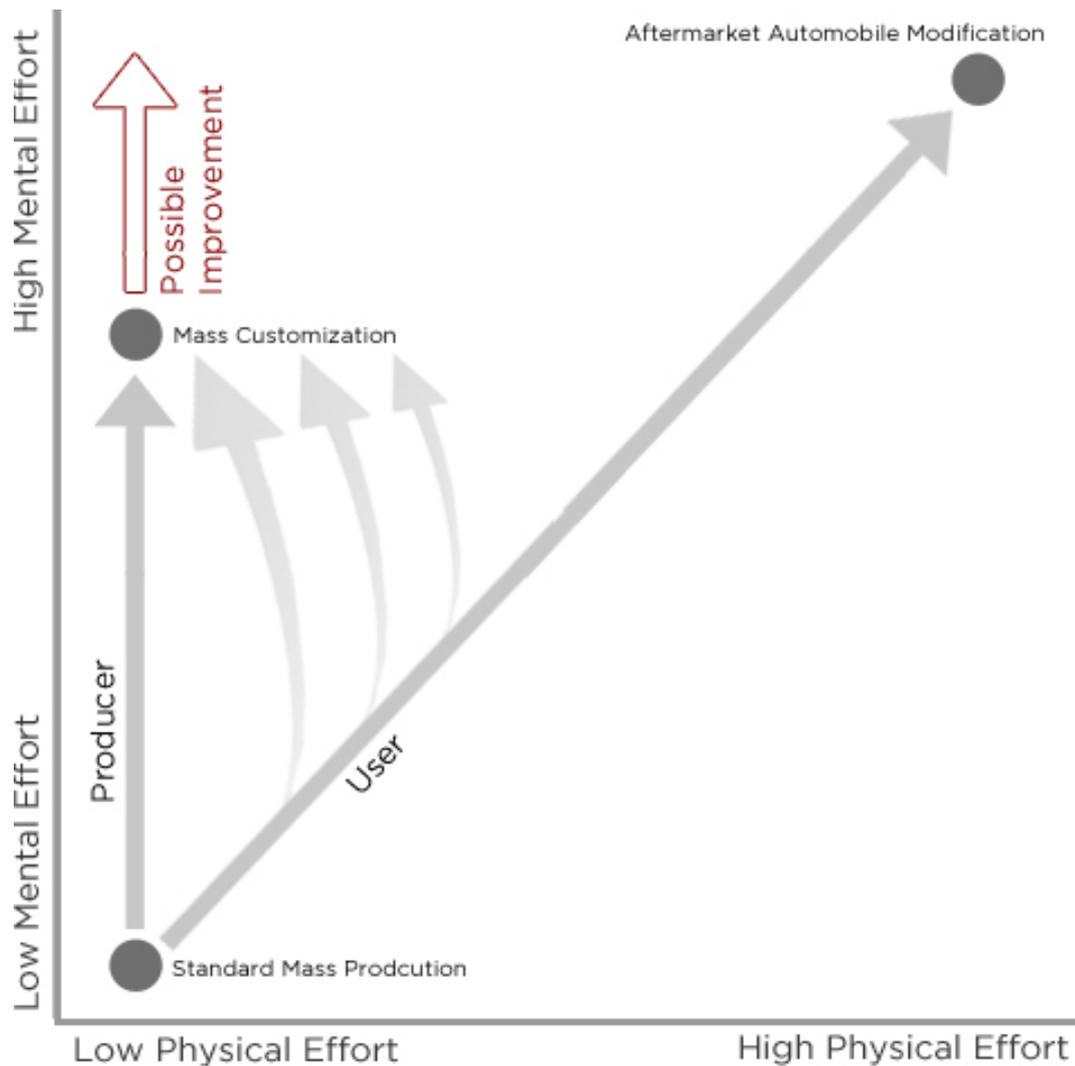
People that know how to interfere with the vehicle who are offered different sets of options each month would also be more willing to change parts on their vehicles. So increasing the amount of personalizable parts would also result in a more flexible kind of product that can be personalized after purchase and after usage as well. More

options would also make the users feel more in control, as the initiative is more on them rather than the designer. MC would offer different kinds of exhausts in order to make engine sound also personalizable too. With all these additional aspects, getting the aftermarket part producers into mass customization would enrich personalization and value increment immensely. Also as a quick guide, different aspects and comparisons between aftermarket car modification and mass customization are given on the table 5.1 below.

**Table 5.1:** Personalization dimensions chart for both MC and aftermarket modification.

<b>Product Personalization</b>	<b>Aftermarket Car Modification</b>	<b>Mass Customization</b>	<b>Inspirations and Suggestions</b>
<b>Mental Effort</b>	High level of mental effort caused by the lack of control of the designer and pre-arranged decision sets and high level of control of the consumer	Less level of mental control because designer is in control. Consumer is merely choosing among alternatives prepared by the designer. Configurators allowing higher user involvement would increase mental effort.	<ul style="list-style-type: none"> <li>- Allowing the user to change the appearance.</li> <li>- Online toolkits to include aftermarket producer parts.</li> <li>- Integration of 3d printers with online toolkits.</li> </ul>
<b>Physical Effort</b>	There is a high level of physical involvement to the product. The consumer is able and willing to interfere with the car in mechanical means.	Nearly none. The personalization takes place on the toolkits on the internet therefore the consumer receives the product already built. Although some people connect with their vehicles via physical involvement, not everyone is keen to do so.	<ul style="list-style-type: none"> <li>-Workshops to teach mechanical parts of the vehicles to the users.</li> <li>-More mechanical appearance rather than concealment.</li> </ul>
<b>Flexibility</b>	The process is highly flexible. The consumer can change parts in time and he/she returns the product to its original back again too.	The process is flexible too, but generally the consumer group is not that willing to change after purchase. Increasing the options of personalization after purchase would increase flexibility in usage.	<ul style="list-style-type: none"> <li>-Increasing customization options to increase flexibility</li> <li>-Newsletters to inform users about new customization options.</li> </ul>
<b>Initiation</b>	The product is personalized fully on the consumer's initiative.	The designer initiates personalization by offering the consumers options of personalization. User initiation may increase with higher level of control over the design of the product.	<ul style="list-style-type: none"> <li>-Initiation to shift from designers to the users</li> <li>-User initiated design for aftermarket part design as well</li> </ul>
<b>Goal of the Product: Utility or Appearance</b>	The goal is both utility and appearance related. The performance of the engines is improved for better utility and the appearance is personalized too.	The goal of personalization is not utility but only in terms of appearance. The goal may be directed towards, performance and voice of the product as well.	<ul style="list-style-type: none"> <li>-Engine sound personalization.</li> <li>-Mechanical performance related customization</li> </ul>
<b>Personalization Moment</b>	The personalization moment is either before usage or during usage. The interpretation of the consumer can be applied anytime.	The personalization moment is before purchase. Consumer chose the optional equipment and personal parts before ordering the product. Also user can buy personal parts after purchase but it is rare. Therefore supplying a new system for during the usage of the vehicle may be possible future direction.	<ul style="list-style-type: none"> <li>-Spreading the moment of personalization from before purchase to the usage periods of the product.</li> <li>-Meetings with other people who personalizes their vehicles.</li> </ul>
<b>Deliberateness</b>	The personalization process is fully deliberate.	The personalization process is fully deliberate.	<ul style="list-style-type: none"> <li>- New and more broad range customization in a more deliberate way.</li> </ul>

The figure 5.2 shows a visual representation of the suggestions that are founded on the research. The two main axes that the model supplied can be told as the ‘mental effort’ and the ‘physical effort’ axes. The other dimensions of personalization usually go hand-in-hand with these two aspects. The high levels of mental effort on the aftermarket modification examples showed the users need for a creative process.



**Figure 5.1 : Figure 5.1: Physical Effort and Mental Effort**

Also on the MC automobile owners a certain tendency for a search of mental effort is clearly visible. While users constantly seek for higher levels of mental effort and a creative process, they do not necessarily enjoy the physical effort to go with it. Although it gives the customers a different level of involvement with the product, not all the people who seek personalization in the products favors toward physical labor related to the product. This situation creates a gap on the MC automobile market.

Therefore a possible improvement on the mental effort could lead to a product, which is highly personalizable. By keeping the level of physical effort low while increasing the mental effort would be a very viable direction in the future. All in all, improvements in mental effort by letting the user design the product in a more realistic way would help them to connect with the object. Also the value of the product can be increased by the increased user involvement in the design process.

From the beginning of the research, a need for a certain categorization was needed. The outcome of the semi-structured interviews distinctly separated different aspects of personalization. The model developed by Mugge, Schoormans, Hendrik and Schifferstein corresponded with the preliminary findings to a great extent. So, the personalization examples on the automotive industry were categorized according to the model mentioned above. The survey questions were also designed with the synthesis of the model and the ethnographic findings. The initial state of the model was designed in order to examine different kinds of products and their qualities of personalization. The information gathered specifically on the topic of automobile personalization, both aftermarket and MC are organized in compliance with the model. The limits, gaps and possibilities became easier to study with the combination of the model with proper ethnographic research and a survey. Adaptation of the model in order to compare and analyze the beneficial features of aftermarket automobile modification and MC gives the opportunity to evaluate different dimensions more specifically. The end results corresponded to the categorization in a very suitable manner. The further research can also continue on the same categorization of this model.

Even a sham connection that is constructed by virtual tools and a freedom of design choice from a narrow set of options results in a high percentage of value increment. How would more direct and mechanical, more vast optioned decision-making process result in terms of value is needed to be studied further more.

## REFERENCES

- Asch, S.** (1952). *Social Psychology*. Englewood Cliffs, New Jersey :Prentice Hall.
- Attfield, J.** (2000). *Wild Things: The Maitaid Culture of Everyday Life*, Oxford and New York: Berg.
- Baudrillard, J.** (1997). *The System of Objects*. London: Verso
- Belk, Rusell W.** (1988). Possessions and the Extended Self. *The Journal of Consumer Research*. September, Vol. **15**, 139-168.
- Bengry-Howell and A. Griffin, C.** (2007). Self-made Motormen: The Material Construction of Working-class Masculine Identities through Car Modification. *Journal of Youth Studies*. September, Vol. **10**, No. 4, 439-458
- Benjamin, W.** (2002). *The Arcades Project*. Belknap Press of Harvard University Press.
- Berger, J.** (1990). *Ways of Seeing: Based on the BBC Television Series*. Penguin, London.
- Blom, J.O. and Monk, A.F** (2003). Theory of Personalization of Appearance: Why Users Personalize Their PCs and Mobile Phones. *Human-Computer Interaction*, Vol. **18**, 193–228.
- Braun, E.** (2007). *Hot Rods*. Mineopolis: Lerner Publications
- Dahl, D. W. and Moreau, C. P.** (2007). Thinking Inside the Box: Why Consumers Enjoy Constrained Creative Experiences. *Journal of Marketing Research*. Vol. **44**, 357-369.
- Foster, M. S.** (2003). *A Nation on Wheels: the Automobile Culture in America since 1945*, Thomson Learning, Belmont MA. 224-225.
- Fox, S.** (2001). Managing Product Personalization. *Engineering Management Journal*. **11** (4), 174–180.
- Franke, N., Keinz, P. and Schreier, M.** (2008). Complementing Mass Customization Toolkits with User Communities: How Peer Input Improves Customer Self-Design. *Journal of Product Innovation Management*. Vol. **25**, 546-559
- Franke, N. and Schreier, M.** (2010). Why Customers Value Mass –customized Products: The Importance of Process Effort and Enjoyment. *Journal of Product Innovation Management*, **27** (7),1020-1031.
- Goffman, E.** (1959). *The Presentation of Self in Everyday Life*. Garden City, N.Y. Anchor Books.

- Hindle, T.** (2008). Guide to Management Ideas and Gurus. Economist Intelligence Unit.
- Hoyer, D. W., Chandy, R., Dorotic, M., Krafft, M. Singh, S. S.** (2010). Consumer Cocreation in New Product Development. *Journal of Service Research* **13** (3), 283-296.
- Jaramillo, F. and Moizeau, F.** (2003). Conspicuous Consumption and Social Segmentation. *Journal of Public Economic Theory*, Vol. **5**, 1–24.
- Kadirov, D. and Varey, R. J.** (2011). Symbolism in Marketing Systems. *Journal of Macromarketing*, Vol. **31**, 160.
- Kleinsmann, M.** (2008). Barriers and Enablers for Creating Shared Understanding in Co-Design Projects. *Design Studies*, Vol. **29**, No. 4 July, 136-146.
- Kojève, A.** (1980). Introduction to the Reading of Hegel. Ithaca, NY: Cornell University Press.
- LaBelle, B.** (2008). Pump up the Bass - Rhythm, Cars, and Auditory Scaffolding. *Senses & Society*, Vol. **3**, Issue 2, 187 -204.
- Lucsko, D. N.** (2008). *The Business of Speed: The Hot Rod Industry in America, 1915 1990*, Baltimore, The Johns Hopkins University Press.
- Lumsden, K.** (2010). Gendered Performances in a Male-Dominated Subculture: 'Girl Racers', Car Modification and the Quest for Masculinity. University of Aberdeen Sociological Research Online, **15** (3) 6.
- Mansell, D., Hall, J. S.** (1954). Hot Rod Terms in the Pasadena Area *Don American Speech*, Vol. **29**, No. 2, 89-104.
- Marx, K.** (2009). Capital Vol.1, Chapter 1 Section 4. Palo Alto, California: ebrary.
- Merle, A., Chandon, J. L. and Roux, E.** (2008). Understanding the Perceived Value of Mass Customization: The Distinction Between Product Value and Experiential Value of Co-Design. *Recherche et Applications en Marketing*, Vol. **23**, No. 3, 27-50.
- Moreau, C. P. and Herd, K. B.** (2010). To Each His Own? How Comparisons with Others Influence Consumers' Evaluations of Their Self-Designed Products. *Journal of Consumer Research*. Vol. **36** Feb, 806-819.
- Mugge, R., Schoormans, J. P. L., Schifferstein, H. N. J.** (2009). Incorporating Consumers in the Design of Their Own Products. The Dimensions of Product Personalization. *CoDesign* Vol. **5**, No. 2, June, 79 97.
- Ong, S. K., Lin, Q. and Nee, A. Y. C.** (2006). Web-Based Configuration Design System For Product Customization. *International Journal of Production Research*, Vol. **44**, No. 2, January, 351-382.
- Piller, F. and Müller, M.** (2004). A New Marketing Approach to Mass Customization. *International Journal of Computer Integrated Manufacturing*, **17** (7), 583-593.
- Pirsig, R. M.** (1974). Zen and the Art of Motorcycle Maintenance: An Inquiry into Values. William Morrow and Company Inc. NY. pp.12-13.

- Randall, T. Terwiesch, C. Ulrich, K. T.** (2005). Principles for User Design of Customized Products. *California Management Review* Vol. 47 No.4 Summer.
- Roser, T. S. and A. Humphreys, P.** (2009). Co-Creation: New Pathways to Value. Promise Corp. London.
- Saad, G. And Vongas, J. G.** (2009). The effect of conspicuous consumption on men's testosterone levels. *Organizational Behavior and Human Decision Processes* 110, 80–92.
- Schreier, M.** (2006). The Value Increment of Mass-Customized Products: An Empirical Assessment. *Journal of Consumer Behaviour* Vol. 5, 317-327.
- Sennet, R.** (2008). The Craftsman. Yale University Press, New Haven & London.
- Steen, M., Manschot, M. and De Koning, N.** (2011). Benefits of co-design in service design projects. *International Journal of Design*, Vol. 5, 53-60.
- Sudjic, D.** (2009). Language of Things: Understanding the World of Desirable Objects. W.W. Norton & Company Inc. NY
- Sundie J.M. and Kenrick D.T.,** Griskevicius V., Tybur J.M., Vohs K.D., Beal D.J. (2011). Peacocks, Porsches, and Thorstein Veblen: conspicuous consumption as a sexual signaling system. *Journal of Personality and Social Psychology*. Apr; 100, 664-80.
- The 2010 Leisure Market Research Handbook** (2009). Richard K. Miller & Associates.
- Veblen, T. B.** (1899). The Theory of the Leisure Class. An Economic Study of Institutions. London: Macmillan Publishers.
- Volti, R.** (2004). Cars & Culture. The John Hopkins University press. Maryland.
- Von Busch, O. and Palmas, K.** (2006). Abstract Hacktivism: the Making of a Hacker Culture. Lightning Source UK Ltd.
- Williams, C. C.** (2008). Re-thinking the motives of do-it-yourself (DIY) consumers. *The International Review of Retail, Distribution and Consumer Research* Vol. 18, No. 3, July, 311–323.
- Wood, J. C.** (1993). Thorstein Veblen: Critical Assessments, 352. London: Routledge.
- Woodward, I.** (2007). Understanding Material Culture. London, UK: SAGE Publications Ltd.
- Url-1** <[http://www.coachbuild.com/index.php?option=com\\_content&task=view&id=81&Itemid=1](http://www.coachbuild.com/index.php?option=com_content&task=view&id=81&Itemid=1)>, date retrieved 27.12.2011.
- Url-2** <<http://www.hurriyet.com.tr>>, date retrieved 24.12.2011.
- Url-3** <<http://www.autoblog.com>>, date retrieved 03.12.2011.
- Url-4** <<http://www.fiat500.com/videoconf/01-EN/main.asp?id=L339770771>>, date retrieved 02.01.2012.

**Url-5** <[http:// www.miniusa.com/#/build/configurator/models-m.](http://www.miniusa.com/#/build/configurator/models-m)>, date retrieved 03.01.2012.

## **APPENDICES**

### **APPENDIX A : The quotations from the interviews**

## APPENDIX A

*“I’m working on this car for 2 years now and I can say that it is nearly finished, but I am still considering a few changes. Before this car, I had a turbo charged ‘Şahin’ and we used to race with BMW’s which happen to be much more expensive.”* At the same time, Ahmet who is a Peugeot 106 Gti modifier talks about this subject: *“I would want to buy a much more expensive car but I cannot afford to. Instead I can compete more expensive cars on the road with these modifications in my car.”*

*“If he were a real person? I’d register him as a member of my family. We are that close. I have a little son and he is even more enthusiastic about the car than me. He is like a brother to me and I’d never ever think of selling him.”*

*“If ‘he’ (talking about his car) were an actual person, he’d be my everything because I share everything with him. If I’m too depressed, I go out with him for a ride and I become relieved. If I’m joyful, I share it with him too. He has the power to bring me even closer to the things which I like and also owns the power to take me away from the things I despise.”*

*“We don’t deal with the exterior looks of the car. There are people out there who do actually work on exterior modification but we are more concerned about how our vehicles perform on the road. Of course there are tiny little bits of new exterior parts we modified too but the main concern of ours is the engine.”*

*“I don’t care much about the exterior look of the car. When you talk with people who actually care about the real performance of their vehicles seriously, you’ll see that they do not do much modification about the looks of their cars.”*

*“I’m working on this car for one and a half year now and I’m still considering a few changes.”*

## CURRICULUM VITAE



**Name Surname:** Ekin BİROL

**Place and Date of Birth:** Çankaya / Ankara, 15 June 1988

**Address:** Cumhuriyet Mahallesi, İncirli Dede Caddesi, Anthill A Kule, Daire:245  
Kat:29, Bomonti, Şişli/İSTANBUL

**E-Mail:** ekinbirol@gmail.com

**B.A.:** Bilkent University - Interior Architecture and Environmental Design

### **Experience:**

**Bilkent University Social Awareness Projects** - Voluntary Education Project - Group Leader and Photography/Dark Room Instructor 4., 5. and 6. grade elementary school students

**Nuovo Accademia di Belle Arti Milanomifamale** - A project under the international furniture fair, Salone del Mobile in Milano with a design team of seven students from Bilkent University Fine Arts, Architecture and Design Faculty

**Furniture Designer (Internship)** - Kurgu Furniture (Ankara / Turkey)  
www.kurgu.com.tr

**Construction Site Assistant (Internship)** - Öney Architecture (Istanbul / Turkey)

**Music Critic – Interviews, album reviews** - Zor Music Magazine (Ankara / Turkey) www.zormuzik.com