# Trends and Visual perception in Car Styling

Special project

Ajay Desai
02613004

Guide:
Prof. **B K Chakravarthy**
IDC, IIT Bombay

The industrial design special project
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by

 Ajay Desai
02613004

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……………………………………..Guide

……………………….Internal Examiner

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# Contents

Designers need to keep on reinventing their products to cope up with the customer 's expectations which depends on prevailing Style and trends and its impact on user's visual perception.

User get visually trained with the existing products (particular style and trend) in to the market and also get tired by so called old products because of the continuous change in the trends. Both training & tiredness is the factors, which influence users perception or expectation for a product.

Thus Style, trends and user's perception ultimately effects the life of the product, that's is why these terms are vital for the companies profit figures, but these are not easy to predict.

This project is an effort of systematic understanding and try to establish link between the related key issue. And also to find out the possible way so that designer can sense this tiredness among consumer sooner and can act accordingly.

▪Product can't exist in isolation from the structure the manufacturer and which sell them neither can they flourish in the cultural vacuum. Product life depend on users training, aspirations & later tiredness from that product, it comes & goes with the change in style and trends. There are so many stimulating factors like:

• Sales Motivation

• Social Process

• Pedigree of archetype

• Tempo Of life information exchange

• New Technology

• Machinery

• Material etc.

• Earlier when a style of dress last for 10 years now reduced to months or even days. This is happening in every area, whether it is Fashion, industrial design, media, or even human relations.

▪ Objective:

The objective of the whole project is to making a model for training and tiredness & its contributing factors so that it will help designer to analyze, predict and getting insight to feel and to do everything in their power….

▪ Scope:
  ▪ The scope of study kept limited to the car styling produced for masses.

▪ Getting Clues:
  ▪ what customer would be dreaming for? Can a designer understand which he (user) himself will not be able to express. is only clue a designer would be able to get is the recent and past trends? Or carrying out inherent previous image of the product is the only way to retain present market share? or creating design excellence for a big leap in the market and setting up our own trend?
  ▪ It is felt that answers can be found by decoding the phenomena of user's perception (training), and sensing the boredom, discomfort, emotional dissatisfaction (or in one word "tiredness"). For this it is required to see the whole phenomena holistically. For this a single model is conceived (Fig. 1). Then primarily maruti with Indian small car segment is taken for the verification of the whole model.

*" Imperceptibly industries, and economy become dependent on aesthetic needs,the rational system of production become supplemented by the irrational, intuitive, personal cultural, non functional; so it is revealed that the economic system and industry need not only science but also the arts"*

*- Ref. the preface of "problem of Design"*

*The large-scale changes that make epochs with vogue, which is only light ripples on the surface of the ocean of style.*

*Fashion-conscious customer may be perceived mainly in products which reflects current trends.*

*" Fashion is the special way of communication between people" The simplest example is the military uniform: in war fare it tells at a distance who is approaching, a friend or a enemy.*

*" The form Appears as a specific sign," write the designers M. Fedrov and Y. Somov In their book Evaluation of aesthtic properties of commodities. Really man perceives the shape of the object, somehow or other respond to it, and this reflex is based on intricate relationship between personality and the world of things, and not things alone.*

*According to M. Fedrov and Y. Somov in the human brain are worked out standards of beautiful and ugly things, criteria that are derivatives of man's individual and social experience on the basis of these criteria, we generally subconsciously estimate the aesthetic merits of what we see. This, of course does not exclude the possibility of revising our preliminary attitude at later stage, when we proceed to logical analysis, but at the moment we are interested in the standards, not in revisions.*

*- ref. From ch.VI "Cycles in dresses "How we see what we see" by V. Demidov*

Fashion is the special way of communication between people, trends are like waves in ocean of style,  A particular trend last for some time and before it dies a new trend will born (see fig.1). Trends has very less effect on styling, But sharp Change in style are sure Sign of some Social process, countries, continents.

visual perception of the user is governed by lot many things, In case of automotive its advertisement, like now a days, more and more people are getting well aware of what European styling is , what is Japanese , Korean , American. User may not be able to tell about these categories but the awareness among people are there.

Style trend and visual perception in Car

The product and styling is the thing, which relate user's emotions with it. As car being a product people like to possess, they like to drive. It satisfies lot many things and you have emotional bond with it. To certain extend or you can say to far extend styling governs that. Usually car manufacturers try to pump life in to the product when it is dyeing or well before that. It is achieved with face-lifts or by Launching variations or by repositioning of the product.

For e.g. in automotive industry,  Car interiors can be governed by trends. Like this or that fabric is trend. But hardcore styling is not governed by trends.

- *As the tempo of life and information gained speed, so did the change in style .*
- *Change in style cycle in dresses*
    - *15th & 16th centuries          50 years*
    - *18th and 19th centuries          25-30 years*
    - *20th century          10 years*

- *In cars and household appliances, styles dominated successively:*
    - *1850-1900          art & craft movement, Art Nouveau*
    - *1900-1930          Art Deco,. Cubism*
    - *1920-30s          "Constructivist" De Stijl, Bauhaus, Modernism*
    - *1930-40s          "Streamlined"*
    - *1940-50s          ornate "Animalist"*
    - *1950-60s          Austere "Classical" Pop style*
    - *1960-70s          "Space" Environment Design Late Modernism*
    - *1980 onward          Postmodern Memphis . .*

*Ref. Vyacheslav Zaitsev, the foremost soviet dress designer told me, "is a fairly correct statement of what occurs in the world of fashion. I would only like to comment on its role in the continuation of the human race. If you love and are loved, you want to impress the object of your love. If fortunately, you are turned down, you want ot impress all the more, and the role of fashions here is colossal. What is more, man is a child of nature,. In surrounding nature, things change from season to season, and in man as well. "fashions of the season" are no freak, but the external manifestation of the desire to note the changes occurring in nature and in human organism, a desire to be in accord with seasons a desire to feel friendly glances on you, we are extremely  sensitive to how we are looked at and women in this respect are the most subtle pressure gauge. Friendly glances stimulates us, bring forth the desire to live happily , finely, a desire to work efficiently- this goes without saying. The idea that one of the stimuli for the change in the fashions is the tiredness of perception seems to me absolutely unquestionable. You know, you work on a new set of costumes, and this takes about half a year, many clothes do not seem as interesting near the end as they appeared in the beginning. However, if this were not so, I would be horrified:  do I really stop in my development?"*

*• Many things do not seem*
*as attractive as they appeared in the beginning….. Is it signifies development ?*

*- ref. From ch.VI "Cycles in dresses "How we see what we see" by V. Demidov*

The idea that one of the stimuli for the change in fashions is the tiredness of perception.

Fighting against the vogue, who fights against the most natural sensation of man.

Against "tiredness" of aesthetic feelings,

Tiredness of monotonous

Familiar information



■ Training of Strong association with political/ administrative power, leadership .

- **Standards**
  - *Generalized images and training references.*
  - *Changes in the fashion are a emergence response to emergence in man's conscience of a training reference turned in to given frequently occurring form.*
  - *Human brain are worked out standards of beautiful and ugly things, criteria that are derivatives of man's individual and social experience.*
  - *This criteria, generally the basis of subconscious merits of what we see.*
  - *Does not exclude the possibility of our preliminary attitude at a later date.*

Many times Success is counter productive for style, Once one trend is set, others follow, because of the training of the visual perception among users, because of which user has tendency to see the similar things in the products, other manufacturer have to follow the popular trend.
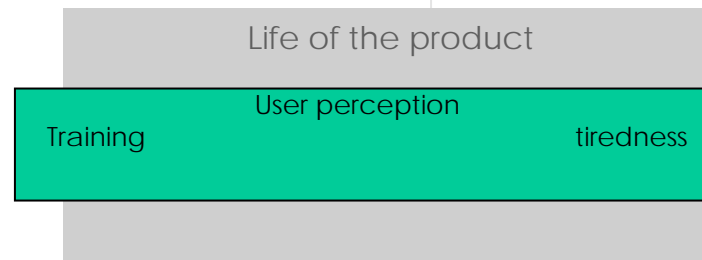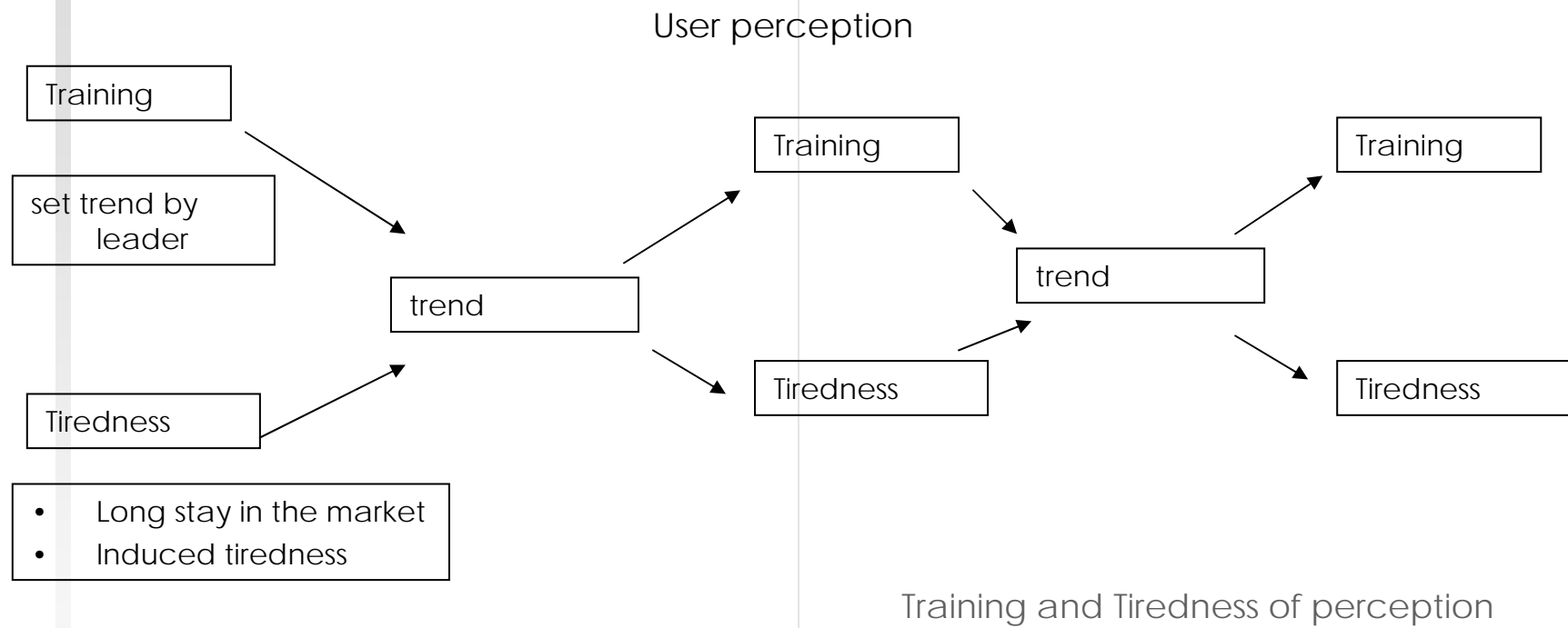
User perception

Training

set trend by leader

Training

Training

trend

trend

Tiredness

Tiredness

Tiredness

Tiredness

- Long stay in the market
- Induced tiredness

Training and Tiredness of perception

Life of the product

User perception

Training                    tiredness

# Stimuli

- Sales Motivation
- Social Process
- Pedigree of archetype
- Tempo Of life information  exchange

- New
- Technology
- Machinery
- Material

## Style –Fashion
- Aesthetics excellence
-  Desirability
- Exclusivity
- Timing

Changing trends

## Trend

### Life of product y

User perception

Training                                    tiredness

model (fig.1) shows possible aspects their relation ship and ultimately their effect on a product life. Model is a effort of visual representation of the phenomena of style, trend and visual perception using their general characteristics of these terms. For. E.g the outermost stimuli box encloses the box of style then trends, product life & then comes the tiredness and training of perception in the form of time line scale. Changing trends are not shown with distinct parting line instead they were shown as they are diffusing in each other, because their can't be like on and off, it is gradual change.

Is it helpful for designer to sense there possible /perspective demand among user sooner? so that product will ride the wave of vogue to gain market success.

With the example of volume of sale increased or decreased in this segment for different models is the effect of trend.

How in recent years life of the models decreases, & frequency of changing trend is increases?

or Is it really true?

The collaboration of the Japanese car giants with India to produce the popular Maruti Suzuki brought in a flood of models. Next, it was the turn of liberalization to effect a drastic turnaround in the market monopolized by Maruti. Collaborations with international giants began to occur, and the Indian aficionado did not have to look beyond the shores for gratification.

The present scenario is a highly changed one. International giants are vying with one other to launch their models. Big names of the vehicle industry like the Korean giant, Hyundai, Daewoo, General Motors, Mitsubishi, TATA, etc. have already opened their account.

Maruti 800:

Indian market M800 is a pure functional vehicle .It governed the Indian market for years because of its competitive price and value for money not because of style. The repositioning follows the face-lifts the car has been getting from time to time in the form of engine up gradation, new power steering, automatic transmission, bumper, Air grille, Head lamps, tail lamps etc, to keep the excitement around it alive in the highly competitive small car market. But then this was not sufficient to satisfy the customer who was exposed to huge international market and information. Given a chance people moved to other cars. And so the market share reduced from 85 % to 55-60%.

**Maruti 800**

Timeline markers: 1983 | 1986 | 1994 | Jan 1995 | Jun 1995 | 1996 | 1997 | 1998 | Jan1999 | June 999 | Jan 2000 | Jan 2004

**December 1983**

SS80 introduced: 796cc hatchback.

**April 1986**

SS80 replaced by MB308 - New-look model, made suitable for Indian conditions.

**November 1994**

Minor changes

- Interior colour revised.

- New seat upholstery.

- Changes to grille and hood.

- Addition of two-speed and intermittent wiper.

- Addition of front door pockets.

- Addition of vanity mirror in front passenger's sun visor.

- Addition of lower console box.

**January 1995**

M800 TK introduced

- Off-the-shelf variant of M800: standard model plus fabric seat upholstery, fabric patch on door trims, rear split seats and laminated windshield.

**June 1995**

M800 DX TK introduced - Off-the-shelf variant of M800 DX: AC model with laminated windshield.

**April 1996**

Compliance to revised emission norms - Changes in catalyst and exhaust system, fuel cut system, and fuel filter neck.

**September 1997**

Major facelift - Exterior: front and rear bumpers, grille, headlamps, rear combination lamp, wheel rim, body side moulding, back door and related body changes.

- Interior: instrument panel, steering wheel, front and rear seats, door trims, moulded roof, armrests.

- Safety-related: door beams, additional body reinforcements.

- Comfort: suspension changed from leaf spring to coil spring.

- DX only: glasses blue to green tint.

**April 1998**

Cold-start emission norms compliance - Carburettor modification, catalyst change.

**January 1999**

M800 EX variant introduced

-- Standard base vehicle fitted with modified suspension and radial tyres.Radial tyres also introduced on M800 DX.

**June 1999**

Compliance to revised emission norms (India Stage I)

- Carburettor change with addition of second air circuit and double-brick catalyst.

**January 2000**

Compliance to revised emission norms (India Stage II)

- F8D MPI 1C4V engine with five-speed transmission introduced.

- Carburettor versions of M800 EX and DX phased out.

**April 2000**

Compliance to revised emission norms (India Stage II)
- F8B 1C2V engine introduced on M800 Standard.

**February 2001**

M800 Standard upgraded
- Coil spring suspension and radial tyres on all variants.

☐ events on time line

How model (fig.1) of "style trend & visual perception" worked in the case of maruti . To establish that we will need to study how maruti since launching her products has brought in the changes in to the cars according to the change in trend. Trend which is seen by analyzing other products of the same category.

How Visual training & tiredness worked in maruti's case. May be for e.g. maruti 800 a boxy look & zan with round edges then due the success in sentro it get reflected in maruti's cars? And the trend of long straight line Is forcing to incorporate in coming products, or in head & tail lights? Or how current trend of wheel arched the way effected Indica will effect the maruti's model?.

Mar
uti
800

1983  1986  1994  Jan 1995  Jun 1995  1996  1997  1998  Jan1999  June 999  Jan 2000  Jan 2004
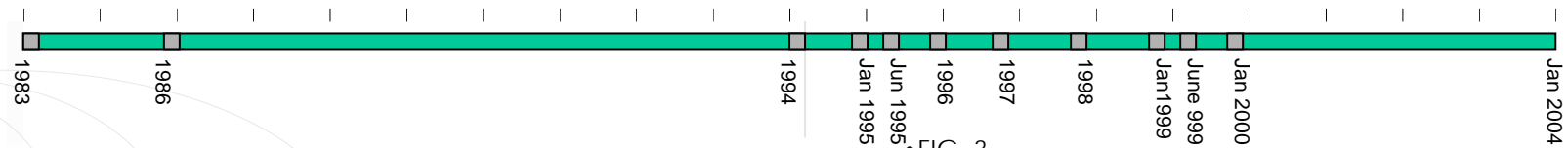
•FIG. 3

Style trends and visual perception

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Change in front grill, Head lamp, bumper with trend



Mar
uti
800

1983    1986    1994    Jan 1995    Jun 1995    1996    1997    1998    Jan1999    June 999    Jan 2000    Dec 2004

•FIG. 4

Maruti
800

1983    1986    1994    Jan 1995    Jun 1995    1996    1997    1998    Jan1999    June 999    Jan 2000    Dec 2004

•FIG. 5

The new Zen:  The entire styling and designing of a car has been done in India. The new car comes with a contemporary European styling. It retains all the popular attributes of Zen, low-slung seating, exhilarating performance, great sensory appeal , trust, low operative cost and excellent fuel efficiency.
The innovations and modifications include an all-new bonnet, a fashionable new grille, fenders, a new set of clear multi-reflector headlamps and front and rear fog lamps, an arresting bumper along with bonded rear screens. The new Zen comes with a new hatch door, tail lamp and a stylish new number plate position. It also has a redesigned gear shift lever, a central console and rear head rests for safety and comfort.

*ZEN*
Launched in 1994 having 999cc engine. Drawbacks of M-800 can't be found in this car. Zen can be found running on European roads though in small numbers, is successful in Europe due to its cost competitiveness and providing world class facilities at such a low cost. entire styling and design of a car has been done in India.

Zen Classic features the retro look so popular in Japan and elsewhere. The Classic has the retro look with round headlights and a vertical chrome grill. The bumpers too get the retro treatment and have been replaced with slim chrome bumpers. It remains to be seen if this model can spark the retro craze in India too.

Launched in 1999

Zen

1983    1999    2003  2004

•FIG. 5

ALTO , Launched in 2000, ranks 3rd in terms of sales.lines and curves complement the muscular look. Two pressed lines on either side and an unique halogen head lamp.





Launched in 2000

Alto

1983

Jan 2000

Jan 2004

•FIG. 6

Launched in 2001
the Wagon R would be fitted
with a 1000-cc engine and is
likely to be positioned to co-
exist with its Zen model. The
model was launched in
Japan in September '93 and
the original model had a 657-
cc engine which delivered 64
horsepower.
The Indian version would
however be different from its
parent model. The new car
has been made to suit Indian
driving conditions and some
changes have been made

September
1993
The model was
launched in
Japan

Wagon R

Jan 1993

Jan 2001

Jan 2004

•FIG. 7

Since starting production in Oct. 1998, Hyundai Motor India Limited (HMI) has grown into India's second largest car manufacturer. Santro is the best seller in the B segment

Santro. If you see Santro it's a typical Korean styling. It's still considered being ugly styling.But people were given a option so they moved to that

Hyundai to position Santro as 'young car' Hyundai is giving its four-year old small car Santro a new and fresh positioning. The target age group for the car has now shifted from 30-35 years to 25-30 years, The old positioning of the Santro as a 'family car' is being changed to that of 'a smart car for young people. The repositioning also comes ahead of the possible launch of a new design Santro, and the super B-segment car 'Getz', sometime in 2003



2003 launched Santro Xing has a distinctly European styling. combined with its sporty stance,

2002 Hyundai to position Santro as 'young car'

1998 Hyundai introduced Santro in India

Santro

1998

Jan 2002

Jan 2003

Jan 2004

•FIG. 8

January 12, 2004
Youth Drives the Trend to Small
             Small cars are coming
back, if the new vehicles and
concepts at the Detroit Auto Show are
any indication. …..But times change
and now there's a trend among
sensitive younger buyers who see them
as an antidote to gas-guzzling sport-
utes. This generation is also responding
to the sport-compact movement that
began in California and was awarded
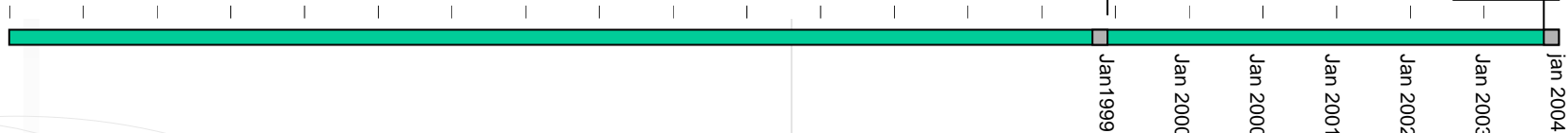authentication…



Detroit Auto Show



Delhi Auto expo







December
1998
Launching

2004
•Clear
lens
Head
lamp
•Wheel
arch
•Bumper

Indica

Jan1999    Jan 2000    Jan 2000    Jan 2001    Jan 2002    Jan 2003    jan 2004

•FIG. 9

Style trends and visual perception

23

Trend of Clear glass head lamp from higher segments entered in to the lower & smaller car segments







1983

Dec 2004

•FIG. 10

Style trends and visual perception

Overboard trying..

Delhi Auto expo

sporty stance,

sporty

•Glimpse of Coming trend..

Style trends and visual perception

• Combining fig2, and fig. 5 to 11..



position Santro as 'young car'

Santro Xing

introduced santro in India

**Santro**

1998

Jan 2002

Jan 2003

jan 2004

Launching

New Model

**Indica**

Jan1999

Launched in 1999

**Zen**

1999

2003

2004

Launched in 2000

**Alto**

Jan 1993

Jan 2001

Wagon R

**Maruti 800**

1983

1986

1994

Jan 1995

Jun 1995

1996

1997

1998

Jan1999

June 999

Jan 2000

Jan 2004

Major facelift

☐ Major Face Lifts events on time line

Style trends and visual perception ☐

26
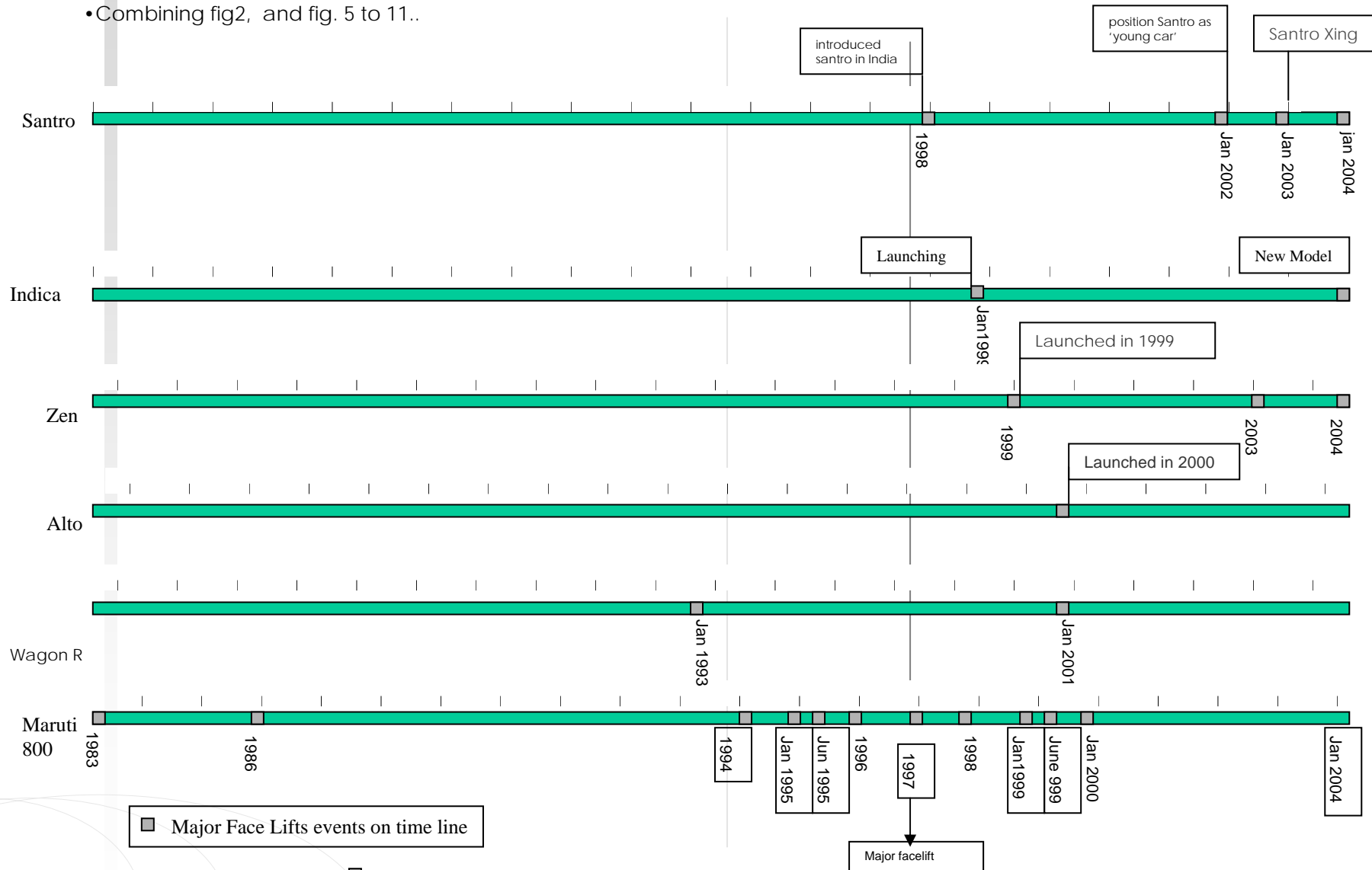
• FIG. 12

Since too many parameters affects the training and tiredness of visual perception, holistic evaluation makes more sense and in that visual representation is helpful. In fig. 12, styling trends on time line of the studied car are combined to study the relationship between each other.

It is clear form the figure That maruti did major face lifts when Santro (launched in 1998 ) and Indica (launched in Jan 1999) were about to launch there models.

when company saw that European styling is well accepted. The new face-lift, as Santro Xing, is a typical European styling.

And also the effect of Santro on maruti models for e.g. on Alto the way pressed line on either side fig. 6.

old Zen it was no-nonsense styling. Well rounded, clear surfaces but impact of latest trend can be seen on new maruti Zen in its head & tail lamps.

New Indica is coming with wheel arc, According to the figure there will be similar kind of changes would be expected in the models of maruti 800 to cope up with the present and coming trend.

Santro, If we see Santro it's a typical Korean styling. New Xing is typically European styled, as they wanted to sale it in export market also from Indian plant.

Indica it was mainly designed in IDEA so Italian flavor is there, new Indica . The very Idea of adding flare is typically European.

From the observations from Delhi Auto expo and available data available on Detroit expo. Showing trend of compact sporty movement (also see page no. 25). For example new model of Idica (see page no. 23) with wheel arcs might be the influence of coming sporty trend.

If we study Indian customer there is different inclination towards styling some like European, some Japanese etc But main inclination moving towards European styling, compact and sporty.

- Cues for the brand images is taken from advertisement and reviews, Considered only the projected image or general opinion about the form, for e.g. what is projected as sporty as a image may not necessarily sporty as a form.
- There are many other parameters, for e.g. artificial influence of new style backed by strong campaign.
- mass produced cars is considered in the study, but certain exclusivity is vital to the plot, if everyone using the same product, it drastically reduce the impact, thus need extra touch of personalization. This aspect was not in the study, because it does not carry big market in India.
- Model for style, trends and visual perception as concept, is in its initial stage it can be further refined and developed.

- Styling is vital for the company's profit figure, but It is difficult to predict. After achieving certain level of functional features aesthetics plays a important role for acceptability of the products.

- Because of the training of visual perception in user, a large swing in style should not be done as it posses a larger risk of failure.

- Higher acceptability can be achieved by sensing the tiredness of visual perception on time.

- Fighting against the vogue is not a very healthy practice as the risks are very high due to the training of visual perception of the user. So we see that changes in vogue happen gradually then there is always time to act and designer should be vigilant about it.

- Without fighting against the vogue, Following overall styling trend with still keeping own identity and novelty is the key of success, which pays more dividends then increasing functionality.

Reviews, url:

http://auto.indiamart.com/cars/maruti-alto/review.html

http://www.mouthshut.com/readreview/16873-1.html

http://www.mouthshut.com/readreview/17853-1.html

http://www.mouthshut.com/readreview/22410-1.html

http://www.vedpuriswar.org/book/The Indian car industry.htm

http://autocarindia.com/home2.asp

http://www.marutiudyog.com

http://www.ess.ntu.ac.uk/miller/psydes/percept.htm


http://www.ipan.com/reviews/archives/1098aut.htm

http://www.autocarindia.com/maintenance/buyingused/buyingused.asp?vehid='78'

http://www.cybersteering.com/pulmain/carscan/aug99/jan20.html

http://newsarchives.indiainfo.com/2000/12/13/13maruti.html

http://economictimes.indiatimes.com/articleshow/260678.cms

http://cities.expressindia.com/fullstory.php?newsid=69383

http://www.indiacar.net/news/n4337.htm

1. Style in Product Design; Graham Vicker; Design Council
2. How we see what we see; V.Demidov; MIR
3. Postmodernism; Jim Powell; Orient Longman
4. A century of Car Design, penny sparke, Mitchell Beazely


5. Papers and Articles:
• Overdrive;Jan –04; by Glynn Kerr

• Speaking The Buick language:Capturing, Understanding and Exploring brand Identity and shape grammar; Jay P. McCormack and Jonathan Cagan, Department Of Mechanical Engineering, Computational Laboratory, Carnegie Mellon university