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# Fragrances with Real Impact

## Focusing development on fragrances that correlate with different consumption habits

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This article presents a basic study identifying which fragrance aspects in women's prestige perfumes cause consumers to reach out for specific products. The roles of "liking" and fragrance impact on consumers' preferences at the critical moment when a woman chooses a fragrance are herein revealed. The method used was conjoint analysis, comprising actual fragrances, themes and communications. The study was executed on the Internet with 280 to 300 respondents in both France and the United States, respectively. The data show that consumers' usage preferences differ by consumption habits and that consumers can identify the degree of fit of a fragrance with specific usage occasions. This article will show the differences in "span of fit" among nine fragrances, and how consumers rate them. The article will also show the role of usage occasions and fragrances as they impact the fit of the fragrances.

### Background

Development and selection of fragrances for fast-moving consumer goods — whether for emotional or practical products — involves quite a few disciplines. Related job descriptions span a range of skills from perfumery, evaluation, marketing, category management and key account management on the ingredient supplier's side, to R&D, product management, market research, advertising and concept development on the manufacturer's side. However, in many cases, the individuals responsible for product and fragrance development — among them perfumers/evaluators — are unfortunately left with too little actionable guidance from researchers responsible for identifying consumer preferences. Fragrance developers typically exert too little influence on the fragrance selection and test process. As a result, they are rarely satisfied with feedback from such exercises. It is difficult to ignore the complaints of fragrance developers regarding feedback from consumer research. In many ways, today's consumer research is neither particularly meaningful to them for guidance, nor effective at increasing their efficiency in creative work. As a result, one may not be surprised to hear that up to 80 percent of fragrance development efforts in the fragrance ingredient industry fail to bear any fruit in terms of directly related sales figures. Furthermore, market researchers are not deeply involved in the creative process — even shielded off at times — and very often miss opportunities to communicate findings that could be meaningful to creative staff.

In today's world, where almost every aspect of product performance is numerically quantified, use of expert opinion as a key yardstick in business decision-making — for instance, in the selection of fragrances for submission to clients — has become very rare. Selections are instead made on the basis of data. For instance, fragrance ingredient suppliers have started to invest large amounts of money in order to create consumer insight/market research departments. The initial purpose of these departments was to provide proof to the client about preference values of submitted fragrance prototypes.

Key problems in testing fragrances are time, logistics and budgets. Prestige women's perfumes — as with many other fast-moving consumer goods — are subject to the powers of rapidly changing markets with an abundance of new entries every season. Although the number of players — manufacturers and suppliers — has diminished drastically over the last few years, the number of launches and, therefore, the pressure, has been growing for the remaining fragrance houses, in particular for creative and consumer research staff.

### Importance of Development-Oriented Consumer Research

Most of the time, women's fragrance briefs require a superior creative effort — generally beating a bench-

mark. This superior creation must be delivered within a short period, lasting several weeks or months. Regardless of these requirements, development and identification of such a superior fragrance takes a considerable amount of time. This means that a number of very different disciplines — among them creative and market research groups — constantly battle for enough time to do their job properly. Since none of the groups can possibly come out a winner, it seems a bit absurd to pursue this antagonistic route.

In these circumstances, one is tempted to first look at speeding up procedures or even cutting some corners. This might bring some relief, albeit only temporarily. A more promising route may be to change one's view more thoroughly, and think by product category rather than by single product or product brief. "Development-oriented consumer research" that augments and perhaps replaces "selection-oriented" research may change the nature of and increase the efficiency of fragrance development by giving quick and actionable feedback to fragrance developers at a very early development stage. Market researchers can contribute much more to successful development than they currently do using the conventional technique of running studies to evaluate the liking or, "goodness," of a fragrance for a given brief or concept. To make this happen, one would need basic knowledge about the impact of relevant product features at the critical moment: when women choose to wear a specific perfume. Liking scores are important, but this aspect does not reveal any useful information about when and how frequently a woman is going to use a perfume once she has purchased it. Identification of the impact of fragrances on usage occasions or consumption habits enables linkage of newly developed fragrances with a range of such habits.

The advantage of such development-oriented research is that no briefs or pre-developed concepts are required to set up the research. It is a "bottom-to-top" kind of research, which provides insight about intensity of fit of fragrances with usage occasions, or so-called "end uses," within the frame of the entire product category. The current study presents this development-oriented approach for the category of prestige women's perfumes. By doing this research in an ongoing and systematic way, fragrance developers can gain clarity about the fit of fragrances and how changes in fragrance features will enhance or de–crease fit with those end uses. In addition, fragrance developers can gain insight about which type, or family, of fragrances fits with which end uses. Instead of running merely evaluative tests under heavy budget and time constraints, researchers may browse a very valuable prospective database that can be consulted for a number of briefs to come.

## Development-Oriented Research and Business

Not surprisingly, ongoing group discussions with 60 women — regular users of prestige women's perfumes — indicated that liking a perfume, the product itself, is sufficient to trigger a purchase. However, most of the women indicated that at the moment of purchase they did not yet have a clear picture how frequently and on what occasions they would subsequently use that particular perfume. The participants told us that their usage choices largely depend on how they feel the moment an occasion arises. The women clearly responded that they would not use one perfume all the time: some perfumes would be used more or less on a regular basis, whereas others would be used

solely on special occasions or even on singularly unique occasions. This ability to categorize the perfumes as to use frequency means that some perfumes indeed could fit with several different usage occasions and may mirror a number of different consumption habits, rather than just a few habits (or even one specific habit).

Logic tells us that a perfume being used on a regular basis will be replaced much faster than perfumes being used less frequently. Market research is very well able to provide a database showing the fit of fragrances with such habits or end uses. Such a database would be of great help to show:

- Different end uses: changing from emotion-oriented to people-oriented usage occasions changes the fragrances that fit with such occasions.

- Segment differences: different types of consumers (subgroups like age, region, profiles, atti tudes) are susceptible to different end uses.

- Ranges: certain fragrances can or cannot cover a range of end uses (span of fit).

Knowledge about what fragrance features are most appropriate for different end uses may be of great benefit for both women's perfume manufacturers and the fragrance ingredient suppliers. Such enables the creators of fragrances to find out to which end use and for which type of consumer his or her creations would be appropriate, rather than leaving the creator simply with a score from a total sample.

Often, in the prestige women's perfume category, total sample results do not reveal the most interesting facts. The real melody and the underlying harmony emerge mostly out of subgroup data. Using such data, many new creations would no longer be stigmatized as "having lost the test" for one or another brief, for which at the outset they may not even have been appropriate. Conventionally, fragrances having failed one test forfeit substantial legitimacy and are easily disregarded for any future brief. A mistake may be corrected using this revised system.

## Development-Oriented Research with Existing Tools

A thorough change of view with regard to development-oriented, or "prospective research," does not necessarily entail new, revolutionary test methods. The key questions are: a) How can the researcher identify the influence of liking on the one side and the span of fit on the other side for a prestige women's perfume? and b) How can the researcher discover the particular characteristics that best fit with

a fragrance for a specific end use? After all, the fragrance is by far the key element of any prestige women's perfume. Other elements are important, but not nearly as important as fragrance. Creating a fragrance and changing certain fragrance features is the task of the perfumer. Such creation is a highly specialized task, and combines thorough memorization of materials, their interactions with each other, existing trends, personal insight and artistry. The perfumer, however, also needs to have insight in the product characteristics that fit best with his or her fragrance for a specific end use from a consumer's point of view.

Conjoint analysis is a popular research tool that has been successfully and widely used to probe the mind of the consumer. In this model, the consumer is presented with a number of systematically varied product descriptions, or constructs, with known elements. The consumer is then simply required to respond to these constructs and assign a rating. Because the researcher knows both the elements of the constructs and the ratings, one can easily and quantitatively identify what particular elements drive the rating expressed by the consumer. We have used this well-known technique, which has been adapted for use on the Internet. The rapid increase of Internet use has made the application increasingly attractive to fragrance developers, as speed and cost reduction are very important issues.

***Study design:*** We used conjoint analysis on the Internet as a tool for data acquisition. The method was set up in such a way that respondents first rated their liking of the fragrance they had put on prior to accessing the test. After having rated their level of liking, the women then chose a particular study theme (end use) in which to participate. Each respondent could freely choose among 10 different themes/end uses, but could participate in a particular study theme only once. The 10 survey themes/end uses comprised four personal-emotions-oriented, or "inner world," themes and six "meeting-with-people-oriented," or "outside world," themes.

After choosing the theme, respondents rated the fit of a series of experimentally designed test constructs (i.e. concepts) to the combination of survey theme and actual fragrance they had chosen. Thus the fragrance was implicit in the survey concept (theme). For any particular individual the fragrance (part of the concept) and theme (the response attribute) was the same across all concepts. When finished with rating the range of constructs, respondents again rated how much they liked the fragrance that they had put on prior to the test. This was the second reading of the fragrance. Finally, the respondents completed an extensive classification questionnaire.

## Survey Themes or Usage Occasions

We selected 10 different end uses or usage occasions for this study, covering the most frequently occurring usage occasions in daily life. The 10 themes deal with occasions that are either meeting-with-people-oriented or personal-emotions-oriented. The first group of themes touches the outside world and the second group touches the inner world of any individual respondent. The survey themes are as follow:

Group A — Outside World:
1. The job fragrance
2. The meeting with friends fragrance
3. The dinner/theater fragrance
4. The dating fragrance
5. The cocktail/party fragrance
6. The holiday fragrance

Group B — Inner World:
7. The be yourself fragrance
8. The new, extravagant fragrance
9. The feeling well fragrance
10. The casual fragrance.

## Elements

In order to be able to present meaningful prestige women's perfume constructs, we created a set of 36 written elements and nine fragrances. The 36 elements were divided into four groups of nine elements each. Written elements were classified as follows:

***Primary attributes:*** Fragrance descriptors — single statements about scents, ranging from simple to more complex elucidations.

***Emotional attributes:*** Single statements describing emotions that occur when a person is exposed to a prestige women's perfume.

***Secondary attributes:*** Single statements, describing other important product features, such as packaging, color, added ingredients or handling.

***Benefits/brands:*** Product benefits or heritage as well as "names" (brands), appropriate for prestige women's fragrances.

Most of the elements included under primary attributes and emotional attributes are similar throughout the entire survey. However, some of them were modified for specific end uses. The elements belonging under secondary attributes and benefits/brands were identical throughout the 10 survey themes.

Elements were structured in such a way that they would be both realistic and easy for consumer respondents to understand. Whatever the specific combination of elements were to be (randomly "constructed" by experimental design), the meaning of the combined statements (elements), plus the fragrance as a whole, was designed for easy comprehension. That is, the concept was designed so that the respondent would understand the concept as a realistic proposition, for a prestige women's perfume. From previous, similar conjoint analysis studies, we know that consumers have no difficulty in understanding or visualizing such constructs. On the contrary, consumers feel very much motivated by such comprehensive, detailed, but easy to understand stimuli. T-1 presents the elements used for both studies in France (with a French version) and the United States.

## Constructs Combined by Experimental Design

Experimental designs comprise systematically varied combinations of the independent variables, arranged in such a way as to permit modeling of the result. Each category included those elements that were related to each other. This was done to prevent a construct from showing two similar elements with a different, or even a contradictory, statement. E01 to E09 are primary attributes; E10 to E18 are emotional attributes; E19 to E27 are secondary attributes; and E28 to E 36 are benefits or brands.

The experimental design chosen here had four categories with nine elements each, arranged in a total set of 60 combinations. Each of the 36 elements was present in only five of the 60 combinations. Combina–tions were made with respectively two, three or four elements, following the design structure. The 60 combinations were shuffled so that a respondent would test concepts in randomized order. Each respondent rated a different set of elements, thus creating a unique combination of the elements for that respondent and a unique set of 60 constructs. This set up enabled us to analyze the data by means of dummy variable regression analysis (Systat, 1997), which shows the marginal or part-worth contribution of each element.

## Fragrance Samples— the Most Important Study Material

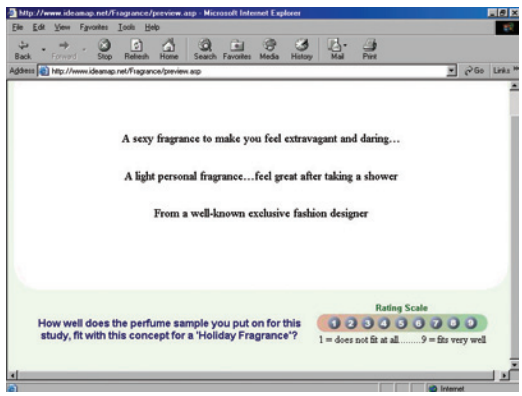
The nine fragrances were sent out to pre-recruited female consumers. Each respondent received a set of

**Elements used for the conjoint analysis—element set: prestige women's perfumes/ United States (example)** **T-1**

| | |
|---|---|
| E1 | Very feminine, gentle . . . characteristic . . .a distinguished smell you will remember |
| E2 | A magic fragrance, a little different every single day |
| E3 | A chic and classic fragrance . . . when you want to be at your best . . . |
| E4 | A rich bouquet of flowers, fruits and spices . . . especially for you |
| E5 | A refreshing fragrance . . . perfect for those sunny days |
| E6 | For men and women . . . |
| E7 | An exceptional fragrance that stands out . . . so different from anything else you know |
| E8 | A pure, fresh, nautural and enjoyable fragrance |
| E9 | A pleasant fragrance . . . light and delicate |
| E10 | An unobtrusive, subtle fragrance . . . your friends and collegues will like it too . . . |
| E11 | A finishing touch . . . just the right scent |
| E12 | Makes you feel secure . . . |
| E13 | A pure pleasure for your senses |
| E14 | Makes you feel perfect, from head to toe |
| E15 | Lifts your spriits . . . like an early morning sunrise . . . |
| E16 | Romantic and tender . . . for those special moments |
| E17 | Tranquility for your senses |
| E18 | The fragrance that brings back happy and precious memories . . . |
| E19 | Made with pure and natural oils . . . help to care for your skin |
| E20 | A brand new fragrance, just released |
| E21 | A solid fragrance . . . easy to apply anytime, ideal when on the move |
| E22 | Comes in a radiant, bright color |
| E23 | Clear . . . pure and transparent |
| E24 | Enriched with aloe vera . . . helps to balance your skin moisture |
| E25 | Available in a gel, with vitamins for skin vitality, to give you a fresh feeling |
| E26 | Comes in a leak-proof small, flat dispenser . . .small enough to carry with you anywhere |
| E27 | A light personal fragrance . . . feel great after taking a shower |
| E28 | Distinguished . . . yet affordable |
| E29 | Created by a young, daring and brillinat fashion designer |
| E30 | From an exclusive jewelry maker |
| E31 | From a famous cosmetics house |
| E32 | From a well-known exclusive fashion designer |
| E33 | From Lancôme |
| E34 | From Giorgio Beverly Hills |
| E35 | From Ralph Lauren |
| E36 | From Estee Lauder |

**Welcome page with registration of fragrance code and first liking question** **F-1**


**Example (United States) of a construct (combo of elements) and rating question, as seen by respondents** **F-2**






three perfume samples: in a neutral, round glass pump spray, identified only by a code such as VK, CF, etc. We made sure that each respondent received a set of three perfumes that smelled as different as possible from each other. This means that we composed each set of three perfumes in such a way that the olfactive characteristics of the three perfumes within each of the three sets were in strong contrast to each other.

The recipient of each set was chosen at random from a list with 300 pre-recruited women. Each of the fragrances was distributed among 100 respondents per country. The e-mail pre-recruitment proved to be very effective, with a response of 27 percent. The pre-recruitment was stopped when we arrived at 385 responses. After scanning the responses, removal of multiple entries and doubtful or faulty entries as to gender and country, we finally selected the 300 women required for the study.

Of the nine fragrances distributed among the 300 women, seven were newly developed women's fragrances and two in-market benchmarks. Benchmarks in the United States and France were not identical. In France we included one perfume from Chanel and one perfume from Dior. In the United States we used one perfume from Estee Lauder and one from Lancôme.

## Execution of the Study on the Internet

Two days after shipping out all samples to women who had registered for participation in the survey, we sent out the invitations. We assumed that after two working days most of the samples, distributed by surface mail, would have arrived at destination or, if not, would certainly arrive within another day or two.

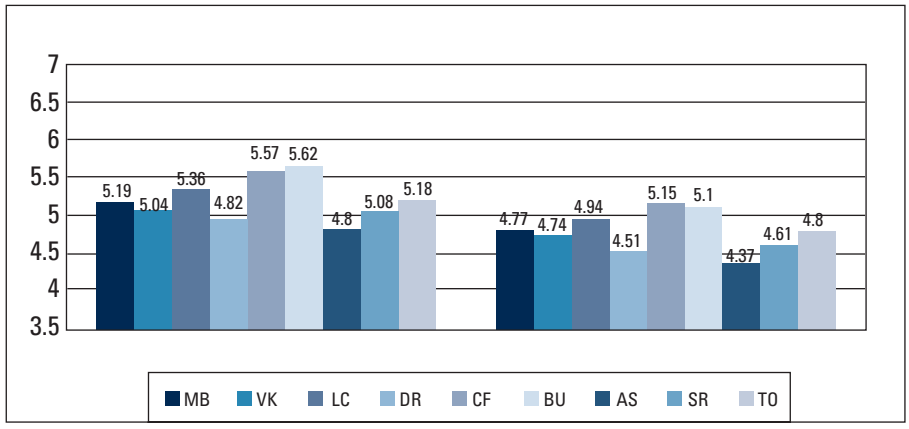
Invitations were sent by e-mail and contained a reference to the person's agreement to participate; information about the samples that had been sent out; and the protected link to the survey with instruction how to proceed and a request to not access the survey before perfume samples arrived.

The self-authored interviews took about 30 to 35 min, depending on per–sonal speed. Respondents were welcomed by an introduction page, which provided useful information and instructions. Before proceeding further, respondents had to answer the first two questions. First of all, they needed to register the code appearing on the label of the perfume they had put on. Secondly, they had to indicate on a drop-down rating scale (1 = dislike it extremely, 9 = like it extremely) how much they liked this fragrance for a women's perfume in general. F-1 shows the welcome page with the liking question. Having done that, respondents could choose a survey theme (end use) in which they preferred to complete. All 10 themes/end uses appeared on a page in two rows. The order in which the themes would appear was in constant rotation. By clicking on the yellow button located in front of the survey title, the study theme would be activated. Respondents rated the fit of 60 test constructs with the fragrance they were actually wearing. (1=Does not fit at all to 9 = Fits very well).

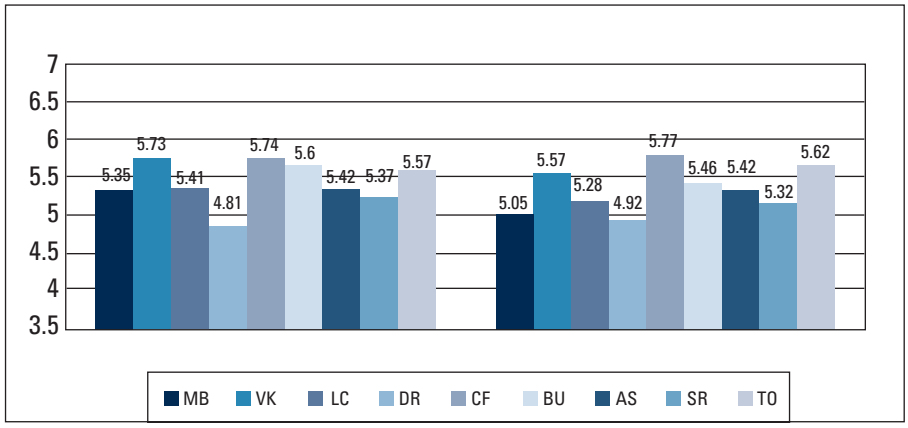
## Liking

A high degree of liking is often thought to be a must for any perfume to be purchased. Conventionally, one may be very tempted to assume that the higher the liking level, the higher the consump-

**Results: liking/total sample/France** **F-3**




**Results: liking/total sample/United States** **F-4**




tion or success should be. However, it may not be true.

We included two measures of liking of fragrance for a women's perfume: one at the very beginning of the test (first impression — sniff) and a second reading after respondents finished rating the 60 constructs (impression after use).

F-3 and F-4 show liking results from both liking questions in France vs. the United States. The story emerging from the two countries and the nine fragrances is very simple:

***Across all fragrances:*** Most of the fragrances show good to very good liking means. Exceptions: code DR and AS in France and DR and MB in the United States.

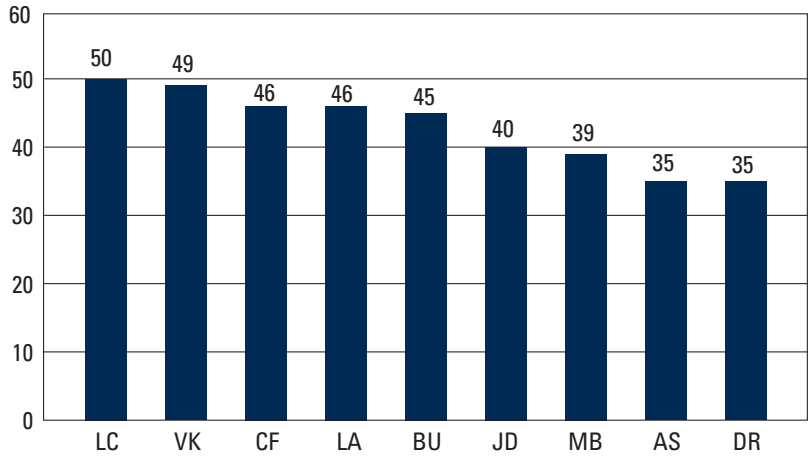
***Country differences:*** Mean scores in France are overall somewhat lower than in the United States.

***In general:*** Liking scores of the majority of the fragrances were very acceptable or even excellent.

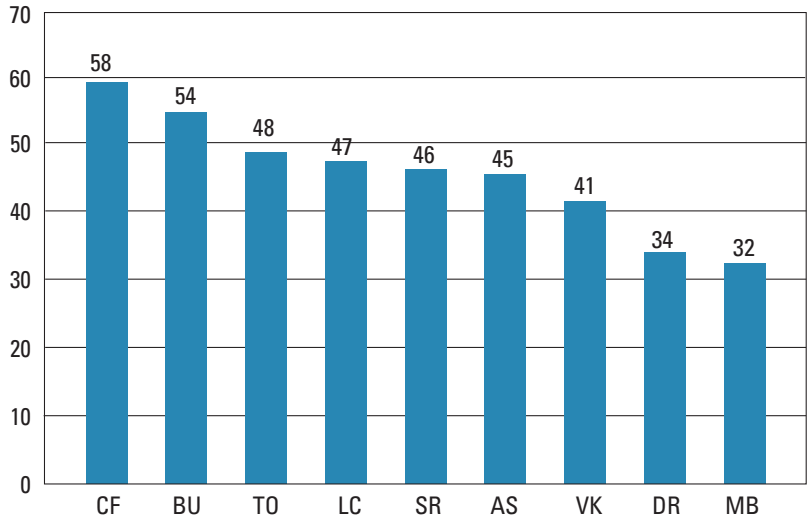
## Fit of Fragrances with Survey Themes— Creating a Model at the Individual Level

Construct or concept models are straightforward to create at the individual level because of all the efforts at the preparation phase. The models are run using dummy variable regression analysis. The independent variables are the 36 concept elements, rated in the 60 combinations. The dependent variable is the fit rating, defined as 0 if the concept was rated 1 to 6, or defined as 100 if the concept was rated 7 to 9. The regression modeling generates an additive model of the form: fit = $k_0$ + $k_1$ (element 1) + $k_2$ (element

**Baseline fit by fragrance — United States** **F-5**




**Baseline fit by fragrance — France** **F-6**




2)…$k_{36}$ (element 36). The outcome is a full utility model for each respondent, showing the impact of every element through its utility value ($k_i$) and through the additive constant ($k_0$).

The parameters of the additive model can be described as follows:

***Additive constant (k0):*** This is the estimated fit of the fragrance used and the survey theme chosen, if no elements were present in the concept. The additive constant is a baseline value. The constant can be interpreted as the conditional probability that a respondent would feel the concept, the fragrance and the theme/end use would fit together if no elements were present. The value $k_0$ can also be interpreted as the number of respondents out of 100 individuals who would feel the combination of theme and fragrance would fit together. For example, when the additive constant is around 10 to 20, the fit of the fragrance as such with the survey theme would be very low. When the additive constant is around 55 to 60, the fit of the fragrance as such would be much higher.

***Magnitude of the additive constant:*** The magnitude of the additive constant can vary. A high positive value for the additive constant suggests that a greater proportion of respondents will say that the fragrance will fit (7 to 9 on the 9-point scale). A value of around 0 means that on the average, no one feels the fragrance will fit.

**Value of the additive constant for different fragrances (across the top) and themes (down the side) — France; the constant is the expected fit of the fragrance/theme combination** **T-2**

| Theme | LC | VK | CF | LA | BU | GE | MB | AS | DR |
|---|---|---|---|---|---|---|---|---|---|
| Be yourself | 78 | 34 | 28 | 69 | 50 | 21 | 28 | 44 | 47 |
| Casual | 26 | 42 | 21 | 23 | 32 | 24 | 42 | 38 | 24 |
| Cocktail/Party | 35 | 52 | 52 | 51 | 2 | 38 | 46 | 59 | 52 |
| Dating | 68 | 40 | 59 | 58 | 59 | 57 | 42 | 22 | 27 |
| Dinner/Theater | 20 | 44 | 69 | 56 | 79 | 48 | 6 | 19 | 17 |
| Extravagant | 61 | 53 | 45 | 57 | 46 | 59 | 35 | 22 | 42 |
| Feeling well | 6 | 68 | 50 | 37 | 60 | 37 | 54 | 52 | 32 |
| Holiday | 63 | 63 | 39 | 45 | 50 | 36 | 57 | 37 | 29 |
| Job | 62 | 36 | 62 | 45 | 34 | 39 | 39 | 40 | 31 |
| Meeting friends | 9 | 60 | 37 | 18 | 38 | 38 | 42 | 21 | 45 |
| Average | 50 | 49 | 46 | 46 | 45 | 40 | 39 | 35 | 35 |
| Liking means | 5.36 | 5.04 | 5.57 | 5.08 | 5.62 | 5.18 | 5.19 | 4.80 | 4.82 |



**Value of the additive constant for different fragrances (across the top) and themes (down the side) — United States; the constant is the expected fit of the fragrance/theme combination** **T-3**

| Theme | CF | BU | GF | LC | LB | AS | VK | DR | MB |
|---|---|---|---|---|---|---|---|---|---|
| Be yourself | 60 | 60 | 36 | 43 | 75 | 30 | 58 | 30 | 42 |
| Casual | 54 | 37 | 38 | 42 | 19 | 30 | 49 | 22 | 42 |
| Cocktail/Party | 77 | 7 | 38 | 53 | 32 | 55 | 26 | 32 | 33 |
| Dating | 61 | 50 | 50 | 63 | 49 | 50 | 22 | 37 | 48 |
| Dinner/Theater | 39 | 34 | 43 | 14 | 47 | 45 | 32 | 41 | 26 |
| Extravagant | 80 | 81 | 66 | 47 | 54 | 84 | 56 | 36 | 14 |
| Feeling well | 44 | 73 | 51 | 57 | 48 | 67 | 35 | 76 | 29 |
| Holiday | 51 | 63 | 72 | 56 | 37 | 45 | 64 | 34 | 46 |
| Job | 54 | 70 | 38 | 46 | 32 | 20 | 46 | 27 | 34 |
| Meeting friends | 60 | 63 | 51 | 47 | 64 | 20 | 24 | 0 | 10 |
| Average | 58 | 54 | 48 | 47 | 46 | 45 | 41 | 34 | 32 |
| Liking means | 5.74 | 5.60 | 5.57 | 5.41 | 5.37 | 5.42 | 5.73 | 4.81 | 5.35 |

***Coefficient, or utility values — one per element:*** The coefficients are the conditional probabilities that the element will add to the fit of the fragrance with the survey theme, if present. The magnitude of the coeffi–cient is the value of the additive or subtractive condi–tional probability. That is, one can add the additive constant to the coefficients for the elements in the concept. The sum is the final estimated conditional probability that the entire concept (elements plus fra-grance) will be deemed fit with the end use, according to the respondent. Depending on how the concept is composed, the sum can be highly positive, near 0, or highly negative. This property will be useful for optimiz–ing the entire gestalt of fragrance and theme/end use.

## Results — Baseline Fit and the Additive Constant

Baseline fit of a fragrance/theme or end use combina-tion is expressed by the additive constant values. In F-5 and F-6 we show the overall average baseline fit by fragrance in the United States and France, respectively.

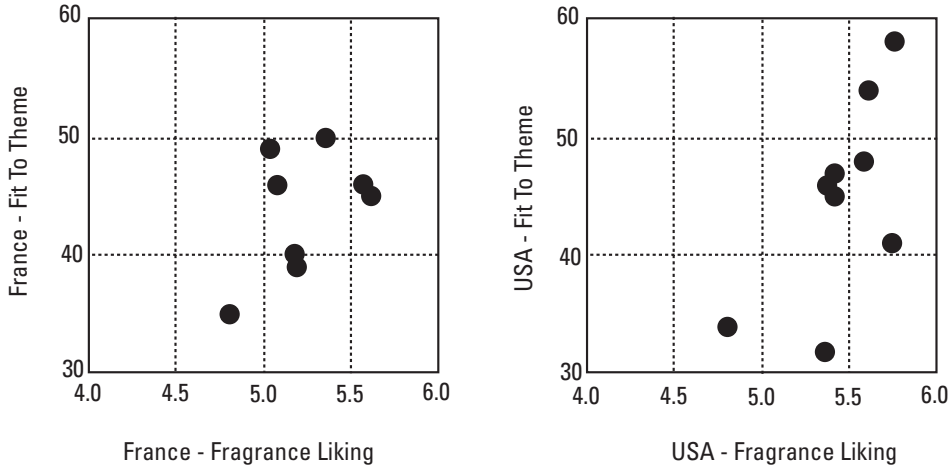
***Example 1:*** The baseline value of 58 obtained by fragrance CF in the United States means that, as an average through-out the entire survey, 58 percent of people said that fragrance CF fits with the 10 themes included in the study.

***Example 2:*** Fragrance DR obtained a value of 35 in France. This tells us that, as an average throughout the entire study, 35 percent of the respondents said that fragrance DR fits with the 10 themes included in the study.

## Baseline Fit — Key Observations

Baseline fit averages across all fragrances show large differences. Averages indicate the intensity of fit of a particular fragrance

**Scatter-plot of liking vs. fit to theme — France and the United States** **F-7**




across all themes/end uses. A high value of 58 for CF would mean that on the average 58 out of 100 people would say that fragrance CF would fit a random end use. However, this does not tell us what specific fragrances and themes fit.

A breakdown of the baseline fit averages by fragrance and by survey theme gives a good idea (in greater detail) about what happens. T-2 and T-3 show the value of the additive constant (baseline fit) for each of the fragrances and themes in France and the United States, respectively. It is from this detailed data that one quickly identifies how specific themes and fragrances fit, and the degree to which a specific fragrance fits one or many themes. The averages show the degree of flexibility. High averages for a fragrance across themes suggest that the fragrance can be attached to many different themes. Low averages for a fragrance across themes suggest that the fragrance is not flexible.

Norms for baseline fit using past experiences from many tests with a similar setup represent quite a good yardstick as to baseline level. Baseline fit value norms are as follows:

- 00 to 20 — Little to modest baseline fit
- 21 to 40 — Modest baseline fit
- 41 to 60 — Typical to good baseline fit
- 61 to 80 — High baseline fit
- over 80 — Very high baseline fit

The values between 0 and 30 represent the lowest fit baseline. The results appear in T-2 and T-3.

Across fragrances and countries: three fragrances show an excellent span of fit across the themes — CF, LC and BU; and two fragrances show a limited span of fit across the themes — DR, MB.

Across themes and countries: four themes appear to fit well with six to seven out of nine fragrances — be yourself, dating, feeling well and new and extravagant; and one theme shows quite a low fit with the fragrances (2 to 4)—job.

## Liking Versus Fit

When a fragrance does not perform well by itself on liking, it probably will not achieve high overall fit ratings. However, when a fragrance scores well or even very well, in absolute terms, this does not mean that a fragrance will score well in overall fit ratings.

Both scatter-plots (F-7) clearly show that:

- Lower liking means would likely lead to a limited fit to themes. Examples: AS scores 4,8 at general liking in France (F-3) and shows a low or modest fit with six out of 10 themes.
- Fragrance DR scores 4,8 in the United States (F-4) and shows a low or modest fit with eight out of 10 themes.
- Higher liking does not seem to guarantee a good, or high, fit value. Example: fragrance MB in the United States (F-4) does very well at liking, but shows a low or modest fit with six out of 10 themes.
- High averages can mislead. Both scatter-plots illustrate clearly that higher liking means (over 5) do not necessarily lead toward high or very high baseline fit values.

## Elements

Perfume product elements are essential for the presentation of realistic stimuli to respondents in order to obtain a

**Dispersion of means — France and the United States; relatively large standard deviations of elements across either fragrances, themes, or combos, are shown by bold numbers** **T-4**

| | France by Fragrance | France by Theme | US by Fragrance | US by Theme | France Combo | US Combo |
|---|---|---|---|---|---|---|
| Constant | 2.7 | 4.0 | 2.7 | 4.1 | 7.6 | 7.9 |
| E1 | 0.8 | 1.3 | 0.9 | 1.1 | 3.2 | 3.3 |
| E2 | 1.4 | 1.1 | 1.0 | 1.6 | 3.9 | 3.3 |
| E3 | 1.1 | 3.4 | 1.0 | 1.4 | 4.7 | 3.2 |
| E4 | 1.3 | 1.9 | 1.4 | 2.1 | 4.5 | 5.2 |
| E5 | 0.8 | 4.2 | 1.2 | 1.6 | 5.3 | 3.6 |
| E6 | 1.7 | 9.8 | 1.1 | 8.2 | 10.2 | 8.7 |
| E7 | 1.9 | 3.5 | 1.2 | 1.8 | 5.0 | 3.5 |
| E8 | 3.0 | 11.4 | 1.0 | 7.6 | 13.5 | 8.9 |
| E9 | 1.7 | 3.4 | 0.6 | 1.5 | 4.8 | 3.3 |
| E10 | 0.6 | 2.7 | 0.5 | 2.4 | 4.1 | 4.0 |
| E11 | 0.7 | 1.0 | 0.7 | 0.9 | 2.7 | 2.7 |
| E12 | 0.4 | 0.9 | 0.9 | 1.2 | 3.0 | 2.9 |
| E13 | 0.8 | 1.9 | 1.1 | 1.5 | 3.1 | 3.3 |
| E14 | 0.8 | 1.1 | 0.7 | 1.8 | 3.0 | 3.5 |
| E15 | 0.9 | 1.0 | 0.6 | 1.6 | 3.6 | 3.2 |
| E16 | 1.1 | 1.6 | 0.7 | 1.2 | 3.6 | 3.4 |
| E17 | 0.8 | 2.1 | 0.9 | 0.9 | 3.2 | 3.4 |
| E18 | 0.9 | 1.4 | 0.5 | 1.2 | 3.1 | 2.8 |
| E19 | 1.0 | 1.4 | 0.7 | 1.0 | 3.5 | 3.0 |
| E20 | 0.8 | 1.1 | 1.2 | 0.7 | 2.5 | 2.3 |
| E21 | 1.6 | 1.4 | 0.8 | 1.3 | 3.9 | 3.1 |
| E22 | 0.7 | 0.8 | 1.8 | 1.5 | 2.9 | 3.8 |
| E23 | 1.8 | 1.6 | 1.2 | 0.5 | 3.3 | 2.8 |
| E24 | 1.2 | 1.9 | 0.8 | 1.3 | 3.9 | 3.1 |
| E25 | 1.5 | 2.1 | 0.9 | 1.0 | 4.0 | 3.3 |
| E26 | 0.6 | 0.7 | 0.8 | 1.4 | 2.8 | 3.9 |
| E27 | 1.4 | 3.9 | 1.1 | 1.9 | 5.0 | 3.5 |
| E28 | 1.0 | 0.8 | 1.1 | 1.0 | 2.7 | 2.5 |
| E29 | 0.8 | 0.6 | 0.7 | 0.9 | 2.4 | 3.1 |
| E30 | 0.6 | 1.4 | 0.8 | 1.3 | 2.7 | 3.7 |
| E31 | 0.8 | 0.9 | 0.7 | 1.2 | 2.9 | 3.2 |
| E32 | 0.8 | 0.7 | 0.6 | 1.1 | 2.8 | 3.2 |
| E33 | 0.9 | 1.0 | 0.7 | 1.0 | 3.1 | 2.8 |



rating for fit. Consumers cannot tell test participants what fits with the applied perfume, unless realistic stimuli are presented. These realistic stimuli comprise concepts that consumers may see in advertisements.

## Utilities of Perfume Elements in Concepts

The utility value of each element defines how much that element adds to the fit of the fragrance/survey theme combination. Large values, whether positive or negative, indicate that the element plays an important role, and its presence either adds to the fit (positive numbers) or subtracts from the fit (negative). Small values mean that the element is unimportant as to fit.

Element utility values are of great help for the following:

***Understanding:*** Differences between element utilities suggest that one should look for the reasons underlying the differences of fit.

***Optimization:*** This process involves the identification of those elements and constructs that contribute most to the fit of a fragrance/theme combination. The con–structs adding most to fit could also be in-terpreted as the fingerprint of the respec–tive fragrance, i.e. how that fragrance comes across in the context of the theme.

## Dispersion (Standard Deviation) of the Same Element Across Themes and Fragrances

Differences of baseline fit (= additive constant) for a fragrance/theme combina-tion, as such, do not reveal the reasons for these differences. Is it the fragrance or is it the theme setup? To find out, we analyzed

the spread of the means of the element coefficients. We looked at the dispersion of the means of element utilities of all 90 combinations of fragrances (nine) x themes (10). By doing this we were able to see what exactly caused the changes among the elements. The dispersion of those means is shown in T-4.

The data displayed in T-4 show the following:

- Each number is the standard deviation of the element mean. There are substantial differences in the standard deviations. For fragrance, the standard deviation of an element is computed across its performance on 10 themes. For themes, the standard deviation of an element is computed across its performance on the nine fragrances. For combo, the standard deviation of an element is computed across its performance on the 90 fragrances x theme combinations
- Standard deviations of the additive constant and elements across the nine fragrances (one mean per fragrance) are relatively low.
- Standard deviations of the additive constant and elements across the 10 theme means (one mean per theme) are higher and more frequent.
- Standard deviations of the means by combo (fragrance/themes combinations), of course, make a real difference in the elements.
- Most of the differences are found in the first group of elements (E1 to E9): primary attributes. These are straightforward to more complex descriptions of fragrance characteristics (specifics).

These results suggest, therefore, that: a) fragrances did not cause real differences in the elements; b) themes/end uses made a real difference in the elements; and c) most of the differences among the elements across themes and fragrances occur in the first group, primary attributes.

## Example of Best-Fitting Elements — Fragrance LC in France

The data provide a rich store of information about the response to combinations of element, theme and fragrance. One example will illustrate this richness. Fragrance LC generated high fit with themes values for six out of 10 survey themes in France. We looked at the best-fitting construct or concept for each of these six well-fitting themes, especially at the element belonging to the group of primary attributes. Here is a brief summary of the results for fragrance LC in France:

***Theme 1 — meeting with friends fragrance:—*** Best-fitting element: brand new fragrance, just released.

### Glossary of Terms Contained in this Article

***Bottom-to-top research:*** This research type looks at value of product or concept features (snippets) and then builds concepts/products by combining powerful features. Conventional research looks at ready concepts/products and selects those that are preferred.

***Development-oriented consumer research:*** This term refers to research that is specifically applied to provide actionable consumer feedback/opinions in early stages of product development. This kind of research is designed to reveal strengths/weaknesses in concepts or product properties for population subgroups, rather than to select concepts/product properties.

***End uses:*** This synonym of "usage occasions" refers to occasions (moments/reasons) during which a consumer literally reaches out for a product and uses it/applies it.

***Fast-moving consumer goods:*** Very often abbreviated as FMCG. These are typically consumer products for 'daily' use comprising categories like foods, beverages, confectionary, savories, household and cleaning products, and personal care products.

***Fit:*** Suitability, e.g. for a particular end use.

***Goodness:*** Degree of fit or suitability.

***Inner world theme:*** Themes concerning a person's own needs or feelings and not related to interaction or communication with other individuals.

***Liking:*** Degree of acceptance by an individual.

***Outside world themes:*** Themes concerning interactions/communication between/among individuals.

***Prospective research:*** Research revealing insight for future concept or product development. Looks at what happens within a product category rather than at single products. Also called "pro-active research."

Selection-oriented research: Research specifically designed to enable people to make a justified choice between two or more products.

***Span of fit:*** In the context of this article this term refers to suitability of a fragrance to fit well with a larger or smaller number of perfume end uses as perceived by different (groups of) consumers.

***Theme 2 — dating fragrance:*** Best-fitting element: a sexy fragrance that makes you feel extravagant and daring.

***Theme 3 — casual fragrance:*** Best-fitting element: a refreshing fragrance; perfect for those sunny days.

***Theme 4 — dinner/theater fragrance:*** Best-fitting element: very feminine, gentle, characteristic; a distinguished smell to remember

***Theme 5 — be yourself fragrance:*** Best-fitting element: when the day starts gray and dull, entice your senses with a warm and cozy fragrance.

***Theme 6 — feeling well fragrance:*** Best-fitting element: a rich bouquet of flowers, fruits and spices especially for you.

The example clearly shows that best-fitting elements in the group of primary attributes are very different from each other across themes. Nevertheless, in the perception of the consumer they fit best with one and the same fragrance. In other words, consumers perceive fragrance LC quite differently, depending on the theme/end use.

The implications from this mini-analysis of one fragrance with its six best-fitting themes suggests that: a) fragrance does not "stand on its own feet;" b) fragrance is quite susceptible to a variety of usage occasions/themes; and c) themes make real differ–ences — not so much the fragrance.

## Implications of This Approach and These Results

A study with a rather large setup like this one pro–duces very rich data that can be analyzed from different viewpoints. This paper deals with the major findings, which we like to summarize as follows:

***Liking scores of the fragrances:*** A good overall liking level is important for newly created prestige women's fragrances. An insufficient overall liking level apparently has a detrimental influence on the span of fit of such a fragrance with usage occasions.

***Baseline fit of the fragrances with themes/end uses:*** Baseline fit (additive constant) of a particular fragrance with themes or end uses does not depend only on a high liking score obtained by that fragrance. Some of the highly liked fragrances show a low/modest fit with quite a number of themes or usage occasions.

***Role of fragrances and themes:*** Fragrances are not as important as themes or end uses. End uses make a real difference, exerting influence on how fragrances are perceived.

***Better opportunities for development of perfumes/fragrances:*** Product developers and creators of fragrances must have knowledge about usage habits/ consumption of prestige perfumes. This includes:

- Overall liking as prerequisite for potential fit.
- Span of fit with a range of end uses (consumption).
- Influence of usage occasions on fragrance.

In conclusion, this development-oriented approach provides the necessary hard, quantitative data needed to get insight in these important issues.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