# Comfort and the Home. Confort à la Maison.

# **Constraints and Gamble Utility.**

The Game.

Money and Source.

Money from Tourism.

Exposure.

Group Setting.

Lead.

Time for Sport.

PharmAsia & Utility.

House.

Presentation.

Cinematic transformation.

Morphism.

Observation.

Ambassade (RO)

Presence au lieu.

Passage aux ÉUA

Policy and Cold

Elena

Félicia

Engagement without Work and Venue.

Policy

Geodesics.

Health

Elle

Capital and Investment (Bonus Malus)

Steigen

Climate

Lobby (bar)

#### The Media Game.

 $\exists (s_i, y_i)$ , where  $s_i$  wait,  $\exists x_1, x_2, ..., x_k$  such that  $f : x_1$  or  $x_k \to y_i$  with  $f(g(x_i)) = f \circ g(x_i)$  with  $g(x_1), g(x_2), ..., g(x_n)$  passing with a discrete representation. Here f is abnormal in effect and g corrector.

The Objective is: a new Index where we expect supplementary (with attractor) (also not complementary) or derived from cinématics. The Objective is seen as with: length, mass, time, electric, current, temperature, substance, intensity of light. The Objective is Evaluated in front of Definitions and there is no Expansion. The regular Space is a linear vector space like  $\mathbb{R}^n$ . The Objective is also known as the Projection theorem in Hilbert Spaces. (other methods are in Optimal Control Theory, second dimension Optimization, and Estimation Problems). The Evaluation is with recursivity in problem, and prediction. Clearly in the Projection, we have hyperplanes and the duality theorem with convexity. The complementarity is by the cone  $Ax \leq 0$ . (by Complementarity we reduce the angle  $\theta$  in the

polar representation  $(r, \theta)$  of the given function.). We will see the impact of vacation in the development of the activity in the house. The adjoint operator of A, namely  $A^{adj}$  is seen as  $(Ax, y) \rightarrow (x, A^{adj}y)$  in the inner product. At that point, at home of x we have relationship at vacation y. The House uses convexity as long as it is related to complementarity. In convexity we have dimensions found from attractors, where the new dimension is the outgrowth in calculus of variation and Lagrange multipliers. At the dimension we do not look for an iterative solution. For the second index we look for successive approximations by Newton's Method, Steepest Descent, Conjugate Gradients, primal and dual Gradients and penalty Functions. From the Projection theorem, we have a second index in Subspaces, Linear Independence, Convexity and Dimensions. Through the inner product (we saw  $(Ax, y) \rightarrow (x, A^{adj}y)$ ) we introduce a norm. We expect the vacation to be a transport. The logistic step (with the logistic threshold) is subject to be in rooms in the House. We want to reach from threshold to threshold. These are Open Steps. At the end they are a Closed Step. At each threshold we have a variety, namely: the Variety V is  $x_0 + M$  where M is a unique space (see casting office) and  $x_0$  a boundary condition, and should be regarded as  $\forall x_0 \in V$ without *instructage*.(or at least at the beginning). If you generate a Show, then for a given subset S then you may construct for the smallest linear variety containing  $S \subset X$ , namely  $V(S) = \bigcap S_i$  where  $S_i \in V$ . But if you have naturalization limits, one solution is to limit  $S_i$ 

to cross dimensional moves. (by cross dimensional moves we mean time rear oblique lines in parallelisation).

The presence of Vacation in a House (inner product- known as from the logistic regression threshold). The complementarity is by the cone  $Ax \leq 0$ . Think of  $a_i \leq 0$  as a

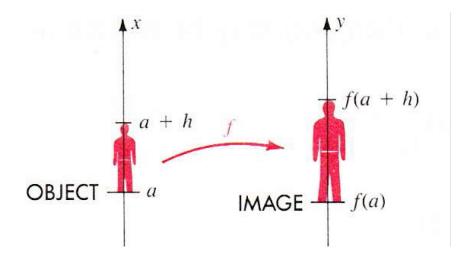
growing sinus around the origin. There are  $b_i \le 0$  such that  $\begin{bmatrix} a_i \\ b_i \end{bmatrix} \le 0$  that are well conditioned and all  $b_i \le 0$  and all b

conditioned, and all  $b_i$ .  $\leq 0$  rather different than sinusoidal close to origin. At that point we call these b suplementarity from vacation. Facing this growth we have diversification and consolidation that lead to ambiguity. Recursion seems to be the solution. (The Towers of Hanoi are respective rooms. Recursivity is defined as:  $memory \rightarrow mobility$ .  $memory = \{\text{eating, bathing, dressing themselves, toileting, walking}\}$ . The Fibonacci sequence is a growing statistic explaining exponentiality.  $(F_N = F_{N-1} + F_{N-2})$ . The domain of the growth comes form the

set: {houskeeping, cooking, getting around, the house, getting around town, grooming, bathing, dressing These are needed in retirement. The Course of the Corridor is

allrooms(graph) = (graph - 1) + allrooms(graph - 1) that is an affluence for the RAMQ (Régie de l'assurance maladie de Quebec). The RAMQ is aware of

{eating, bathing, dressing, toileting, transferring/walking, continence}. At a break you may sort by ordering:  $x_{i-1}$  and  $x_i$  rarely, like on weekends. On weekdays the procedure is to find the smallest and hold it. Address at that point the Congres Council at Parliament. Basic amenities are: {Onsite help, Walkers, Unit availability}. The strategy with the RAMQ is magnification where the subject  $g: \mathbb{R}^n \to \mathbb{R}^n$ , with g'(x) > 1,  $\forall x$ , for parallelism from [a, a+h] = [g(a), g(a+h)], with critical point  $\frac{\delta(g(a), g(a+h))}{\delta(a, a+h)} = M$  the magnification that varies with [a, a+h] where h is its size.  $M = \frac{g(a)-g(a+h)}{h} = g'(a)$ . As an example say the segment  $g(x) = x^2$ , then g'(a) = 2a. This M is close to a tax solution. Services Quebec: www.gouv.qc.ca. (Assemblée Nationale).



The Care giving Gap. We see Apartment like living, Small Group Houses, Consuming Care Communities and Specialized Care. The present terminology is assisted living, staffing and non-training standards (left as retirement usually). In each case we have a locally compact and convex space. The use of the Space is known by: Treffenpunkt ins Haus (Angabe Sitz und Gesellschaftsvertrag). We saw in the Game that  $x_k$  (the Contingency at work) together with the budget, representation, media and geodesics are joined. This is consolation.

**Gegenteil** (definitions): It is believed the only entrance in the House are emails and newspapers. The Gesellschaftsvertrag define an Ort Funktion. The Change (Wechsel) is arbitrated by Herkunft (origin), Wohnort (place) and Reiseziel. The Change is not modelized. About terminology we have die Konzessivsätze mit Eigenschaften (Kleidung, Frisur,...). The following verbs are acts from Gegensätze (einen Standpunkt behaupten mit Verbind, Fügüng und Vorsilben). The action principle (Gegenteil means Region in Part) is  $\exists n$  a frame (emails and newspapers) with existing closed  $\Psi_n$  (Angabe Sitz und Gesellschaftsvertrag) with a financial and other frame.  $\forall k, \{x_k\} \subset \Psi_{k+m \le n}$ . In the Game we have a cinematic determination  $s_i \to y_i$ . About termiology, we know more from French: s'étirer quand on sort du lit, déjeuner avant toilette, éviter l'obésité, Lust and Good Agent.

Die Zeit und der Lebensraum, or the Time, is known as a quantity, a norm and fiscal year. The domotique effort is for having other produce production of these time quantities. A study of luxury affluence exists. It functions as an ad. Der Lebensraum ist  $\partial(x_i, y_i) \in Space$ , is a rational distance inbetween two individuals, that turn as a second dimension as an attractor. (these individuals are young). This is a problem of geopolitic and geodesic. A zone of comfort is defined in front of control, a constant level of possible performance. Domotique is known as a retroaction (feedback) on the interior environment (it is autonomous and adapted to the house and needs). This definition is such as from the utilitary vision of domotique. Der Lebensraum and function is defined close to needs: conception (furniture and apartment), facilities and toilets, appliances, hot water, WC, water room. We see the quality and utility of objects in the close environment and close to social housing. The closure of  $x_k$  in the Game is close to a total set and there is a paper that may be seen on the Mal Anglais. The materialist view of the House is useful only if it is shared (with troubles in cleaning and renovations). The Mal Anglais is seen by the sequence: transport, restauration, hôtellerie, appliances and literie (bedding).

**Cinematic Prospection.** (Domain and the House) There are Identification Assumptions: the Stereographic Projection. Another Assumption is Property with intentionality, pragmatic, coherent, reliable and productive Design as seen in the Syndicates Numériques. We see the closure of  $x_k$  in the Game as a second index, where imagination (the i particle) falls in inner product computation of the adjunct. One does not have to be reliable and productive. A third Assumption is the Grouping. The argument is a logical argument, but the argument is cinematic and direct as from the House and  $\mathbb{R}^n$ , as general vector space by angle length and distance from inner product of V. It is believed one is immune if this happens. Divergence on the soil is defined as  $\nabla \cdot F$ , where F is  $\mathbb{R}^n \to D$  (a function space). It is sustainable if  $\exists \nabla \cdot \nabla F$ . (the Laplacian) One has to reduce (r, 9). We consider sustainability as one looks for a Lump Sum at Home. (If the  $\exists \nabla \cdot \nabla F$  then we are likely). The step we are at is Auto Determination and Occurrence.

Work and Residence is considered of effect if we move faithfully from polar to cartesian coordinates, and is forwarding the fiscal year. Nobility and Utility train one for finding a second index. For the residence, we have the following paragraph:

Partial fraction decomposition of rational functions for the intent of integration. (facilité de compréhension pour espace compact)

$$\frac{x}{(x-1)(x+3)} = \frac{a}{(x-1)} + \frac{b}{(x+3)} = \frac{a(x+3) + b(x-1)}{(x-1)(x+3)} \to x = a(x+3) + b(x-1)$$

$$(a+b) = 1 \text{ and } (3a-b) = 0 \to a = \frac{1}{4} \text{ and } b = \frac{3}{4}M.$$

# Candidate for partial; fractionating. (about Gellért in Budapest) $x_3 = \frac{x_1T_1+x_2T_2}{x_1+x_2}$

$$x_3 = \frac{x_1 T_1 + x_2 T_2}{x_1 + x_2}$$

We let believe that T(x) exists, and T(0) = 200.

In  $\Delta t$  minutes we face  $30\Delta t$  minutes of 200 species (passage) at quality 40, to find:  $T + \Delta T = \frac{40(30\Delta t) + T(1000 - 30\Delta t)}{1000}$  where 1000 is the maximal capacity.  $\Delta T = \frac{1200\Delta t - 30T\Delta T}{1000}$  and  $\frac{\partial T}{\partial t} = \frac{1}{100}(120 - 3T) = 1, 2 - 0, 03T$  If you solve this differential equation, namely  $\frac{\partial T}{\partial t} = 1, 2 - 0, 03T$  with T(0) = 200

$$\Delta T = \frac{1200\Delta t - 30T\Delta T}{1000}$$
 and  $\frac{\partial T}{\partial x} = \frac{1}{100}(120 - 3T) = 1.2 - 0.03T$ 

we have:  $T = 40 + 160(e^{-0.03})$  and  $\ln(e^{-0.03}) = \ln(\frac{T-40}{160})$  such that

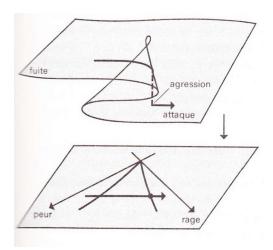
$$t = \frac{1}{-0.03} \left( \frac{T - 40}{160} \right)$$

# Stability and Fixed Points in the House.

The Model is with Objects O and Vectors V. The class of arrows f is with source s(f) = O and arrival a(f) = V. If  $f \in Homeomorphism(O, V)$  and  $f : A \to B$  then  $\exists g : B \to A$  such that  $gf = I_A$  and  $fg = I_B$  then the homeomorphism is an isomorphism.

The best Model as from now is: Find transitions departing at *n* features of the house to *n* accumulation points without having these transitions (arrows) cross themselves. In Graph terminology they are planar Graphs and these have combinatorial advantages.

We call a **stable situation in front of Conflict**: as the cone in the picture below, known as  $Ax \le 0$  and is complementary. The catastrophe is the folded paper. (commodity) The arrows at two accumulation points seem to have n=2 in the following picture. Peur means Scare and this with Rage contain the accumulation points. The accumulation points are wanted as the following graph.



The accumulation points are wanted as the following graph. They are in each room, ordered from the Living Room (last in the picture) The house is already linearly ordered with constance. The object is also to keep few values around given data. In regard to the living room we have a French word: Gîte.

#### Are two points of the House near each other?

We saw from parallelism [a, a+h] = [g(a), g(a+h)] where the distance is associated with the continuos function  $g: x \to y$ . We call  $\aleph_x$  the neighboring family of x. The question

is: is y in  $\aleph_x$ ? The answer is in this manner:  $\forall \aleph_x$ ,  $\exists \Re_x$  (rear neighborhood) such that  $\Re_{\aleph_x}$ . These are conditions of continuity in the sleeping room, living and dining and toilet rooms. In the case of Toilets,  $\Re_{\aleph_n}$  is not open. That means we may take steps. We know that n accumulation points are vertices of convex polyhedrons. Projections are to meet the use of the Government. Because of the accumulation points being linear from one to the other, we know that if we have sub-sets X and Y of finite dimension, one of both has an interior that is not empty, one closed and the other compact, and we know  $\mathbb{R}^m$  locally convex. (Separation theorem). As these accumulation points are linear in order, there is a Fixed Point defined as: the space is C convex and compact (planar as we saw) included in  $\mathbb{R}^m$ , such that  $f: C \to C$ ,  $\exists p$  such that f(p) = p. Also some accumulation points fall into Land. These are rights! If we find such a point we may find a utility solution for investment or finding assets. The Living Room is also known as Publicity within Calendar.

#### Conformity of the Corridor.

We consider the same  $f: C \to C$  and from complex analysis we have a conformal point  $z_0$ , on a threshold if the derivative  $D^1(f(z_0)) \mid_{z_0}$  who conserves oriented angles (most of time mornings). In mid-day the associations comes from  $f: \mathbb{R}^m \to \mathbb{R}^m$ , in the canonical base

(1, i), 
$$\exists \alpha, \beta$$
 such that  $\exists \begin{bmatrix} \alpha & -\beta \\ \beta & \alpha \end{bmatrix}$  (syndicate)

Collation: the polar coordinates present ellipses where the sum is constant from the radiuses. It is clear that phone calls before the collation are troubling.

# Was ist Ihr erster Eindruck beim Blick in den Raum? What is your procedure starting from the Living Room?

## Citizen in Residence viewing. Operators and Inner Products.

For domestic products we calculate the relationship of two citizen- one you in the house and the other in society. By setting a residence, the sequence of photos  $A_i$  have a transport. (ie: the observer notices that he is transported thereafter j photos and seeks to speculate at this time, and we are visual.). We are in the presence of i pictures. Each photo is represented by pixels  $(a_{ii})$ . Clearly this is a matrix  $A: x_i \to y_i$ . This operator varies from spaces

the sequence 1;2;3;4 
$$\rightarrow$$
 21;20;44;45. Right here  $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \begin{bmatrix} 5 & 6 \\ 8 & 7 \end{bmatrix} =$ 

by pixels 
$$(a_{ij})$$
. Clearly this is a matrix  $A: x_i \to y_i$ . This operator varies from spaces  $E_1 \to E_2$ . A suite  $A_j$  where  $j \in \mathbb{N}$ , is the transport engaged by  $j$  pictures. An example of  $A$  is the sequence 1;2;3;4  $\to$  21;20;44;45. Right here  $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \begin{bmatrix} 5 & 6 \\ 8 & 7 \end{bmatrix} = \begin{bmatrix} 21.0 & 20.0 \\ 47.0 & 46.0 \end{bmatrix}$  a quick calculation. The computer may calculate the inverse matrix of  $A$ . Both observers in residence have the probability  $Pr(u, v) = \cos \theta = \frac{u \cdot v}{Pr(u)Pr(v)}$ . Clearly  $u$  and  $v$  is a regression to 0 is a progression goes to 0. By this artifice we associate the sequence of

is a regression to 0 is a progression goes to 0. By this artifice we associate the sequence of pictures on the walls with the observers.

#### The Union (Pool Market), Inner Products and Operator

An example of union is: 
$$a_{ij} = \begin{bmatrix} \sin x & \frac{d \sin x}{dx} \\ \cos x & \frac{d \cos x}{dx} \end{bmatrix} = \begin{bmatrix} \sin x & \cos x \\ \cos x & -\sin x \end{bmatrix} = (b_{ij})$$
. The

solution of the photographic perspective is the following calculation  $a_{ij} \rightarrow b_{ij}$ . About Union, we are aware that there are photographic pictures in perspective. By this artifice we set up

observers.

#### Cadrage and Photos.

If the cycle contains two pictures  $P_1 \rightarrow P_2$ , so if  $P_2$  is adjunct to  $P_1$ , the cycle is complete. If the cycle contains k pictures  $P_1P_2 \rightarrow P_k$  and  $P_{i+1}$  are adjoint to  $P_i$  then the cycle is complete. The computer may calculate the adjoint, then this example

cycle is complete. The computer may calculate the adjoint, then this example 
$$\begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$
, has the following adjoint 
$$\begin{bmatrix} ie - fh & ch - ib & bf - ce \\ fg - id & ia - cg & cd - af \\ dh - ge & bg - ah & ae - bd \end{bmatrix}$$
. Clearly if the origin is such that  $c = e = g = 5$ , in a case of one example, then 
$$\begin{bmatrix} a & b & 5 \\ d & 5 & f \\ 5 & h & i \end{bmatrix}$$
 is true, and has adjoint 
$$\begin{bmatrix} 5i - fh & 5h - ib & bf - 25 \\ 5f - id & ia - 25 & 5d - af \\ dh - 25 & 5b - ah & 5a - bd \end{bmatrix}$$
. By this device, we simplify the classification of photos from their frame. The adjunct operator is like a Harbor.

and has adjoint 
$$\begin{bmatrix} 5i - fh & 5h - ib & bf - 25 \\ 5f - id & ia - 25 & 5d - af \\ dh - 25 & 5b - ah & 5a - bd \end{bmatrix}$$
. By this device, we simplify the

#### Photos Montage. (Wie erscheint die Atmosphäre im Raum?)

Facing the curious citizen, the picture 
$$P = \begin{bmatrix} 5 & -3 & 1 \\ -3 & 0 & 5 \\ 1 & 5 & 4 \end{bmatrix}$$
 has a spectral radius of 7.7.

Several spectral rays in the assembly are a suite in residence. (for that citizen)(we speak of the union between two observers) (another way of saying it is: two neighboring citizens see the same assembly, but the order of the pixels P is their interest as speculators). Since the Unions, (interior products and operators), we retouched well the photos. If for example, we

have the photo  $P_1$  retouched as  $P_2$ , so, if the suite of pixels are 1;2;3;4 in  $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ , and the retouched adjoint is  $\begin{bmatrix} 4 & -2 \\ -3 & 1 \end{bmatrix}$  we say we go from  $P_1$  to  $P_2$  and inversely. We define

conditioning of  $P_1$  and  $P_2$  as the sensitivity of certain pixels to disturbances in  $P_1$  and  $P_2$  and inversely. This figure is a statistic. For example  $||P_1|| = 14.933$ . This is the presence of a Man's Mistress.

Generation Raute (Diamond) - Auβenpolitik und Lebensraum. (known as middle society and is independent of action) (Kraftlösigkeit (ohne Deutsch) Geld! Magda Popeanu's Service in Montréal ist partiell ins media und Drau $\beta$ en. Idylle is the solution.

Opérateurs pour Syndicats Numériques et Ressources depuis la RAMQ. Digital **Pool Media Arts Operators and Resource from the Government.** The Operators work by Elasticities, Convexity and Optimality of Cost Functions.

### Elasticities at Office.

The Elasticity of y = f(x) with respect to x is the percentage change in f(x) corresponding to a 1% increase in x.

$$El_x f(x) = \frac{x}{f(x)} f'(x) = \frac{x dy}{y dx} = \frac{\partial (\ln y)}{\partial (\ln x)}.$$

We consider  $|El_x f(x)| \ge 1$  as elastic at x, and  $|El_x f(x)| \le 1$  inelastic.  $El_x |f(x)g(x)| = El_x f(x) + El_x g(x)$  and  $El_x \Big| \frac{f(x)}{g(x)} \Big| = El_x f(x) - El_x g(x)$   $El_x |f(g(x))| = El_x f(x) El_x g(x)$ ,  $El_x f(A) = 0$  if A is a constant,  $El_x x^a = a$  and  $El_x e^x = x$   $El_x \ln(x) = \frac{1}{\ln x}$ .

We also have partial elasticity as 
$$El_x f(\bar{x}) = El_{x_i} f(\bar{x}) = \frac{x_i}{f(\bar{x})} \frac{\partial f(\bar{x})}{\partial x_i}$$

**Differential Equations and Variation**.  $\frac{\partial x(t)}{\partial t} = f(t) \leftrightarrow x(t) = x(t_0) + \int_{t_0}^t f(\tau) d\tau$  and f(t)

monotone. There are 3 homeomorphisms:

# 1. Wave strength (time pattern with phone income)

$$\frac{\partial x(t)}{\partial t} = f(t)g(t) \leftrightarrow \int_{t_0}^{t} \frac{1}{g(\tau)} d\tau - \int f(t) dt = 0 \text{ or}$$

$$E_1(f(x),g(x);\circ) \rightarrow E_2(\int_{t_0}^t \frac{1}{g(\tau)}d\tau, \int f(t)dt:-)$$

#### 2. Wave growth (time elasticity with phone income)

$$\frac{\partial x(t)}{\partial t} + ax(t) = b \leftrightarrow x = Ce^{-\alpha t} + \frac{b}{a}$$
 or

$$E_1(x(t), \frac{\partial x(t)}{\partial t}; +) \rightarrow E_2(x(t), e^{-\alpha t}; -)$$

#### 3. Wave speed (time through with phone income)

$$f(t,x) + g(t,x) \frac{\partial x(t)}{\partial t} = 0 \iff \text{is exact if } f'_x(t,x) = g'_t(t,x) \text{ or }$$

$$E_1(f(t,x),g(t,x)\frac{\partial x(t)}{\partial t};+) \rightarrow E_2(f'_x(t,x),g'_t(t,x);-)$$

It is the homeomorphism  $f(u \cdot v) = f(u) * f(v) \implies \cdot$  and \* are convex combinations In this case f has a maximum that we may trust.  $f(u \cdot v)$  is the exercise in a year  $(u, v \in \mathbb{R}^n)$ , and f(u) \* f(v) in 10 years  $(f \in \mathbb{R})$ 

A 5 year correction would be af + bg(u) \* af + bg(v), where af + bg(u) is an exercise in 10 years.

$$f(x_i)$$
 is concave on  $S \in \mathbb{R}^n$  iff  $f(x) + f(x') \le \sum_{i=1}^n \frac{\partial f(x')}{\partial x_i} (x_i - x_i')$  or  $f(x) - f(x') \le \nabla f(x')(x - x')$ , or  $f(x) - f(x') \le \left[\frac{\partial f(x')}{\partial x_1}; \frac{\partial f(x')}{\partial x_2}; \dots \frac{\partial f(x')}{\partial x_n}\right] (\overrightarrow{x} - \overrightarrow{x'})$ . This is also known as an homeomorphism.  $E_1(f(x), f(x'); -) \to E_2(\nabla f(x'), \overrightarrow{x_i} - \overrightarrow{x_i'}; -)$ 

$$El_{x}f(\overrightarrow{x}) = El_{x_{i}}f(\overrightarrow{x}) = \frac{x_{i}}{f(\overrightarrow{x})} \frac{\partial f(x)}{\partial x_{i}} = \sum \nabla f(x') \begin{bmatrix} x_{1} \\ x_{2} \\ x_{n} \end{bmatrix} \cdot \frac{1}{f(\overrightarrow{x})}$$

We know have:  $f: \mathbb{R}^n \approx S \to \mathbb{R}$ , and  $\nabla f: f(x \in S) \to \mathbb{R}^n$ 

$$\nabla(cuv + v^2w) = \begin{bmatrix} cv \\ cu + 2vw \\ v^2 \end{bmatrix}, \ \nabla(cuv - v^2w) = \begin{bmatrix} [cv] \\ cu - 2vw \\ v^2 \end{bmatrix}$$

$$El_{x}f(x) = \begin{bmatrix} cv & cu - 2vw & v^{2} \end{bmatrix} \begin{bmatrix} u \\ v \\ w \end{bmatrix} (\frac{1}{cuv - v^{2}w}) = -\frac{1}{v^{2}w - cuv} (v(cu - 2vw) + v^{2}w + cuv)$$

$$El_{x}f(x) = \begin{bmatrix} cv & cu + 2vw & v^{2} \end{bmatrix} \begin{bmatrix} u \\ v \\ w \end{bmatrix} (\frac{1}{cuv + v^{2}w}) = \frac{1}{wv^{2} + cuv} (v(cu + 2vw) + v^{2}w + cuv)$$

We are in front of the probabilities relating a women, found likely at u also close to v at other time with another probability, and close to w maybe at another place than West Berlin, as another probability.  $El_x:(0,1)\to(0,1)$  is known as elastic.

#### The Laplacian is at the Bundesamt.

 $\nabla^2(cuv + v^2w)$ , Gradient is  $\begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix}$ . In this case the woman is classified as final.  $\nabla^2(v + v^2 + 2^{-3})$ 

 $\nabla^2(x+y^2+2z^3)=12z+2$  where  $z\in[0;100]$ . In this probability we have furtherence.

and 
$$\nabla(x + y^2 + 2z^3) = \begin{bmatrix} 1 \\ 2y \\ 6z^2 \end{bmatrix}$$

#### **Classical Optimization.**

 $f(x_1x_2...x_n) \to \max \text{ if } \exists x_i^* \in S \text{ such that } f(x^*) \ge f(x) \text{ a cost function.}$ 

This  $x^*$  is also a candidate to be maximal for F(f(x)) on S.

We also have the sequence  $F_1F_2...F_n(f(x)) \leftrightarrow x^*$ 

If  $f: S \to \mathbb{R}^n$  there is a maximum.

 $x^*$  is stationary, if  $f_1(x^*) = 0$ ,  $f_2(x^*) = 0$ , ...,  $f_n(x^*) = 0$ 

If f is concave then  $x^*$  exists. The stationary points are mostly saddle points.

$$F_1F_2...F_n \Rightarrow F_n(f_1f_2...f_n) \rightarrow \max = F_n(f_1',f_2'...f_n')$$

The elasticity is

$$El_{x}(F_{n}(f'_{k})) = (El_{x}F_{n})(El_{x}f'_{k}) = El_{x}f'_{k} = \frac{x_{i}}{f'_{k}(x_{i})} \frac{\partial f'_{k}(\overrightarrow{x})}{\partial x_{i}}$$

# Discrete Dynamic Optimization.

The Dynamic Programming Problem:  $\max \left[ \sum_{t=1}^{T} f(t, x_t, u_t) \right]$  on  $x_{t+1} = g(t, x_t, u_t)$  with t = 0, 1, 2, 3... T - 1, with  $x_0 = x^0 \in \mathbb{R}^n$  and  $u_t \in U \subset \mathbb{R}^r$  The exercise  $x_1 x_2 ... x_T$  and  $u_t \in U \subset \mathbb{R}^r$ 

$$\max \left[ \sum_{t=1}^{T} f(t, x_t, u_t) \right] = f(t, x, u_1) + f(t, x, u_2) + \dots + f(t, x, u_T)$$

$$\frac{\partial f(t,x,u_1)}{\partial t} = 0, \quad \frac{\partial f(t,x,u_2)}{\partial t} = 0, \dots \frac{\partial f(t,x,u_T)}{\partial t} = 0$$

The ordering is  $f_1, f_2, ... f_T$  for  $u_1 u_2 ... u_T$ , concluding  $x_1 x_2 ... x_T$  and  $u_1 u_2 ... u_T$  on  $f_1, f_2, ... f_T$ 

#### Properties of Cost Functions as Policies of Comfort.

There is a preference relation  $\succ$ , where  $x \succ y \rightarrow x$  at least as good as  $y \rightarrow u(x) \ge U(y)$ , where U is a utility function.

We define:  $U(p,m) \to \max_{\overrightarrow{x}} \left[ u(\overrightarrow{x}) : p\overrightarrow{x} = m \right]$  is a linear program. This is a gain for a series of women, namely  $\overrightarrow{p} = \left[ \begin{array}{cc} p_1 & p_2 & p_n \end{array} \right]$ . The public is  $m_j = \left[ \begin{array}{cc} m_1 & m_2 & m_m \end{array} \right]$ .

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