Peripheral Vision:

An Interview with Gui Bonsiepe charting a lifetime of commitment to design empowerment.

Gui Bonsiepe: Professor of Information Design
Escola Superior de Desenho Industrial (ESDI) Brazil

Introduction

This article documents a staged interview with Gui Bonsiepe[1] conducted by James Fathers.[2] The interview attempts to shed some light on the career of this figure who has been at the heart of the discourse in design in a development context and yet is little known in the mainstream Western design literature. The purpose of the interview was to explore some of the thoughts, methods and motives behind a career which has spanned the last 40 years and has largely been devoted to addressing the challenges of design in the context of the periphery.[3]

Bonsiepe was trained at the Hochschule für Gestaltung in Ulm (HfG Ulm)[4] in the second half of the 1950's. He then went on to teach and design there, from 1960 to 1968, alongside his friend and mentor Tomás Maldonado. When the institution closed in 1968 he made the decision to move to Chile and so began his 35-year odyssey with design in the context of the periphery and, in particular, in Latin America.

The Interview

> Q1: *You are well known for your writings and experiences of de*
> *signing in developing countries especially in the 1970's & 80's.*
> *Can you describe why you first became interested in the role*
> *of design in development?*

I studied at the HfG Ulm in the 50's where we had a considerable number of foreign students particularly from Latin America. So this was my first contact because, similar to the rest of Europeans at least at that time, I didn't know anything about Latin American History or Culture. Then in 1964, I was invited to Argentina by my teacher, friend and intellectual mentor Tomás Maldonado, whom I consider one of the most important design theoreticians of the 20th Century – a real giant, though his works might not be known widely outside the Spanish and Italian language context.

I arrived in Buenos Aires, planned to stay for two weeks and stayed for two months. I was fascinated by the cosmopolitan climate of the city – a city in which you could go to the cinema at any time of the day or night, if you wanted! I hadn't found this to be the case in Germany, least of all in Ulm, a very small provincial town.
So this was my first contact, purely personal, without any professional intentions.

In 1966, I travelled again to Argentina in order to teach a course in packaging design & packaging technology. The course was organised by the International Labour Organisation (ILO) who contracted me as a consultant. At that time the United Nations International Development Organisation UNIDO did not yet exist.
So step-by-step my encounters with the periphery started to get more intensive.

In 1968 I decided to move to Latin America. My move to Chile coincided with the closure of HfG Ulm, though it was not motivated by this abortion of one of the most influential experiments in design education in the second half of the last century. I had the chance to go to Milano, which at that time was already a very attractive place to deal with design. But I accepted an alternative offer again by the ILO to go to Chile, to work there as a designer on a project for the development of small and medium scale industries. In Chile I got into the real world.

A decisive influence on this decision had been my Argentinean wife. When we discussed these options, either to go to Milan or Chile, she told me to opt for adventure. I didn't know Chile at that time, I didn't even speak Spanish. She said simply, look, in Europe everything is already done in design, lets go outside where there are new challenges.

*Q2:   In 1973 UNIDO commissioned you to write the report –
        'Development through Design' how did this come about?*

At the beginning of the 70's, ICSID our international professional organisation became more and more interested in what was happening in Developing Countries - we didn't have yet the name 'Peripheral Countries' and Josine des Cressionières, the Belgian secretary general of ICSID at that time, approached me to write this report. As far as I remember there was a draft paper already written by an American designer, Nathan Shapira, but this paper had certain shortcomings, mainly because this colleague didn't have substantial first–hand experiences in a developing country context.
The deadline was six weeks – a very short deadline taking into account that the internet did not exist at that time. I collected whatever materials I could get hold of, from India, Cuba, Chile, Brazil and Argentina and presented this as a working paper to an expert meeting in Vienna, where for the first time, an international organisation explicitly dealt

with Industrial Design policy for those countries which were called at that time 'developing countries'. This draft was then transformed onto a guideline paper for the industrial design policy of UNIDO.

Q3: What are your most significant memories of your experiences designing in Chile & Argentina?

This is a very personal question and I am not particularly keen on getting involved in my own history. But since you asked the question, the most negative memory I still have of my stay in Latin America, was the 11th September 1973 when the military coup d'état was implemented with help from outside secret services and covert military support against the democratically elected government of Salvador Allende. As you might know, this coup d'état with its tortures, killings, and 'disappearences' was officially legitimised by declaring that the "occidental and Christian values of our culture had to be defended." So much for the values of our society. This was the negative side.

I then moved to Argentina, for obvious reasons. I had the luck of having a German passport, otherwise if I had had a Brazilian or Argentinean passport, I probably wouldn't be sitting here talking with you. It took me several months to get over the traumatic Chilean experience and in nine months I wrote the book "Theory and Practice of Industrial Design". Written in German, it was published in Italy in 1975 and later translated into Spanish and Portuguese.

On the positive side, I had the good luck of meeting & getting acquainted with and then getting to know a group of very passionate design students who had just finished or were finishing their university courses. These courses did not fulfil their promise: to educate industrial designers. Their titles were something like 'craftsman in decoration' which was somewhat distant from 'industrial design' and still dominated by an interpretation of design as a kind of art – or worse, applied art! Furthermore, I found positive resonance within higher government officials for the design approach that I practised. This was for me, a very fertile environment.

The political experience I had gained in Europe was limited. I was interested of course in political issues which was inevitable in the fervent climate of the 60's. During my education in Ulm, reading the books on critical theory such as Ernst Bloch, Theodor W Adorno, Walter Benjamin, Herbert Marcuse & Jürgen Habermas as part of our seminars, was a must. So, I had some critical consciousness of what was going on and what makes economies tick, but I did not have any experience of a direct relationship between professional

work and the socio-political environment or a socio-political programme. In Chile this was possible to map professional practice to a socio-political programme.

I do not know Mr Newby or his article. I am not sure what motivated him to make this assessment but if my landing or Parachuting into Chile is not to his preferences, then its his problem, not mine. Perhaps he wanted to insinuate a politically motivated disagreement and would have preferred me to have arrived in a Rolls Royce in 1975 at the palace of Mr Pinochet, a person with whom I definitely would not share a dinner! I assume its the ulmian design approach that irritates the author and that he wants to disqualify – and not my supposedly Parachuting. By the way, I was *invited* to go to Chile and did not – and do not – favour any idea about 'intervention'.

Now to the negative influences, I am not quite sure about what these might be. The pragmatic rational 'ulmian' approach that made it possible to draw a profile of the industrial designer and to consolidate his education apparently met a latent need. Otherwise the resonance would not have been as strong as it has been. There seems to exist a hidden romantic notion of the Periphery: that it should maintain its status of pristine purity that would be contaminated by any outside contact. It might be advisable to distinguish between influence and influence. I don't see anything negative in the endeavour to contribute to a project of social emancipation. I did not come as a missionary to Latin America. What I did was to provide an operational base for concrete professional design action. People in peripheral countries, and Latin Americans particularly, are not as naive as sometimes is supposed. They are critical and demanding. I offered some operational tools in order to do product design, from agricultural machinery to wooden toys for children and low cost furniture, and get rid of the ballast of art tradition and art theory. This operational know-how was not provided by the Universities at that time because the teachers on these courses often did not have first hand design experience. I wonder how you can teach design if you don't practice design. For this reason there was a vacuum and a very fertile breeding ground and thus receptivity for any relevant information and methodological tools, which would help, resolve practical design problems.

> Q4: In the Design for Need conference at the Royal College of Art
>   in 1976 you made the statement "My Summary, based on
>   eight years of continuous work in peripheral countries
>   'Design for dependent countries' should read 'Design in de
>   pendent countries' or `Design by dependent countries'. The
>   centre does not possess the universal magic formulae of
>   industrial design which have to be propagated to the inhabit
>   ants of the periphery whom the intelligence agencies' ideologi
>   cally conceive as…[the] …underdeveloped…" [6]
>   Do you still hold this view?

To a certain degree, yes. I would not move one millimetre from the position or the state-
ment that, according to my opinion, design should be done **in** the periphery and not **for**
the periphery as the result of some kind of benevolent paternalistic attitude of the centre
to these countries. I insist and have always insisted on local design practice. Design
problems will only be resolved in the local context and not by outsiders coming in for a
stop-over visit. This typifies one of the great disadvantages of short-term consultancy
jobs, with people flying-in from the central countries with very little knowledge about the
local context and believing that issues can be resolved by remote control. To cite one
example: the deep present-day economic and political crisis in Argentina is well known.
Now if the International Monetary Fund sends a specialist to Argentina to deal with the
question of foreign debt who does not speak Spanish, then this is quite revealing of the
ignorance and arrogance with which international institutions often confront local reali-
ties that are different from the view from an office window in Washington or New York.

> Q5: At this same time Victor Papanek was writing about similar
>   issues. Design historians have put the two of you together as
>   the key figures in what has become known as the "Design for
>   Need movement." Did you discuss your theories together or
>   collaborate on any projects? How would you feel your ideas
>   differ from Papanek?

In 1964, when I spent one semester as guest professor in basic design in Carnegie Mellon
University, Victor Papanek invited me to go to North Carolina where he was teaching
industrial design to show me the design approach he had developed. I had high esteem
for Victor Papanek because he dared to swim against the stream and against the compla-
cency in design practice and design education. For this courage he was heavily punished.
For a number of years he was almost prohibited from speaking publicly at industrial
design conferences in the USA. However, my esteem for Papanek did not prevent me from

writing a polemical review of his book 'Design for the Real World'.[7]
He had attacked a sensitive issue but his approach and the answers he was ready to give seemed to me not adequate. I would say that he had little understanding of the political economy of design. As is known, he became fascinated by the 'do it yourself' design approach and did not have a strong interest in industrialisation and the development of economies. He opted for design services outside of the business and industrial enterprise context, which I considered of limited effectiveness like that of a maverick. For this reason I did not share his views but this does not mean that I have underestimated his contribution to the field. The receptivity of his book "Design for the Real World" which was translated into many languages shows that he had touched real issues. But in answer to your question we never developed projects together. We occasionally met at confer-ences. I also wrote a review of his book 'The Green Imperative.'[8] I think this was his last book. After this we lost contact.

> Q6:   The Design for Need movement seemed to draw on a collective
>   desire in the design profession to do something about social
>   need. In hind–site can you offer any suggestions as to why
>   this movement appeared to founder?

I wouldn't say that it foundered, because it didn't take off in the first place. It was an attempt to find some answers as a profession to the needs of the majority of the world population which we felt were left out. This movement, sometimes also called the 'alter-native technology movement', changed into the 'appropriate technology movement' and was promoted particularly in Great Britain, where they had an office with consultants offering services in appropriate technology especially to African and some Asian coun-tries. Later in the decade this activity lost momentum and went into oblivion. I suppose the reasons are the following; the 'Appropriate Technology' and 'Design for Need Move-ment' could never quite get away from the prejudice (and it is a prejudice really) that it deals only with second rate and third rate technology. It seemed to continue with a class distinction between two types of technology: high-tech for the central countries and low-tech do-it-yourself technology for the periphery. The appropriate technology movement in the 80's was influenced by the writings of EF Schumacher, who wrote 'Small is Beautiful.' Increasingly the main protagonists of this movement were coming from the fields of engineering and economics. There were hardly any industrial designers as far as I know. Designers played a marginal role in these efforts to do something about design in what was at that time called developing countries.

"I consider it a merit of the representatives of the appropriate technology
movements to have asked some uneasy questions about industrialisation and its
effect on the Third World; furthermore, of having shifted attention to the rural
(poor) population in the Seventies there still was the hope that a different
social organisation would give rise to different products and a different mode of
consumption. This hope has today been shattered"
The statement that hope is today shattered is a very strong
one. Can you explain the thoughts that led to this conclusion?

You see in the 1960's & 70's and even up into the 80's there was still a vague hope called the 'third way' between the eastern block or socialist countries and the Western block or capitalist countries. With the demise of the former socialist countries or the eastern block, at this moment there seems to be no alternative outside the general configuration of capitalism. The only alternative nowadays can be found within the system of globalisation, which we will perhaps talk about later.

So, taking up the notion of 'shattered hope': I am by temperament and by decision not a depressive character. Rather I would characterise my self as a constructive pessimist and therefore I don't agree at all with the well-known 'TINA' dictum by Margaret Thatcher (There Is No Alternative). I would claim there are always alternatives.

Q8: *In recent years you have not written very much on the issues*
relating to role of design in a development context. What
triggered this apparent shift in focus?

I worked in Brazil from 1981-87 as a consultant in the National Council for Scientific and Technological Development participating as designer in the formulation of an industrial development policy. There, however, I had only limited access to computer technology. The technological revolution - information/computer technology - attracted my interest. I perceived that there was coming up a radical change and enormous challenge for designers. One day I got a letter with an offer to work as a designer in a software house in Berkeley. I took this offer and started to work there in this new field of technology, which I felt was of utter importance - of a similar importance as the invention of moving letters for the printing press in the 15th Century.
If I could have got access to computers and software development from a user's perspective in Brazil, I probably would have remained there, but I didn't and so I moved to the

States. And there I worked for three years. The practical work as a designer in a software house, permitted me to re-interpret design, getting rid of the traditional topic of form & function and developing an interpretation of what design is all about, based on language and action theory.

Alongside this I rediscovered the work of Heidegger. As a German it was very difficult for me to read Heidegger after the devastating critique by Theodor Adorno "The Jargon of Authenticity". However in Berkeley I was fortunate to be able to assist in some philosophy conversations amongst others with Hubert Dreyfus. I got a better understanding of Heidegger through the English translation and interpretation. Taking some notions from Heidegger and computer sciences I developed a re-interpretation of design as the domain of the interface where the interaction between users and tools is structured. This I consider not a minor contribution to design theory.

Having said all this, let me just add one thing. My interest in peripheral countries has not diminished; on the contrary it has increased due to their economic decline and to what I consider to be the symptoms of the end of a uni-dimensional socio-economic model. In my last book available in English[10] , I assess the role of design in the Centre from the perspective of the Periphery and vice versa. As well as this I have established, created and co-ordinated the masters programme in Information Design at the University of the Americas Cholula, Puebla Mexico and continue to work on this programme. I live part time in Brazil where my main base of operation is located, returning to Latin America whenever my teaching obligations in Germany permit me to do so.[11]

Q9:   It is well known that in the 1970's & 80's you were a significant influence in the 'Design for Need Movement'. Despite this prominence it has been said that you have received little or no recognition as a designer and in fact in the 1980's you are quoted as saying this is due in part to a political agenda. Both Er &Langrish and Madge state that despite Bonsiepe's involvement in the area since 1968 he is still relatively un known in design circles and has remained marginal in the design literature. The reasons given are "because the subject itself did not attract any interest within a design world domi nated by theoretical underdevelopment and self–centred design discourse' [12] and "because the issue of design in developing countries has increasingly been seen as a political

Recognition is a relative issue. It is not one of my major concerns. We might ask: recognition where and by whom? I am not particularly inclined to self–branding and self–promotion in the professional field of design. I cannot complain about an absence of recognition – the opposite of what might be called the narrow-minded chauvinism of the 'centre' that dwells in supposed superiority or 'development.'

There are universes of language, and if we limit ourselves to the universe of discourse of the English language, we are by definition cut off from a lot of what is going on in the world. In Latin America where I am teaching, living and writing for a great part of my time, I cannot complain about an absence of recognition.

> *Q10. What would you say your own contribution has been to the*
> *field? What lessons have been learned & what would you do*
> *differently?*

These are various questions, so I will take them step–by–step.

I consider my function in Latin America more as a catalyst, simply being there at the right place at the right time with the right kind of people, just by chance, mixed with an ingredient of personal decision because of my general interest in the Latin American culture – the great variety of different cultures, which I find very stimulating. I feel at home or at ease when I am in Latin America, be it Brazil, Mexico, Cuba, Argentina or Chile. I don't feel like a foreigner there. On the contrary, I find a receptive climate for what I am teaching and writing and doing as a professional. The hospitality and solidarity of Latin Americans is proverbial.

Now, assessing what I have done so far – and I tell you that I don't intend to end my work very soon! I would say that I helped, in a critical moment of industrialisation, to define the profile of the industrial designer in Latin America, perhaps even with extrapolation to India and other peripheral countries at that time. Apart from this professional role, I educated or put some students on a track where on the one hand they acquired the capacity of a critical discourse and at the same time became efficient professionals. During our meetings at this conference arose frequently the conflictive issue between practitioners versus theoreticians. I find this a very damaging tradition. I do not accept this bi-polarity that labels you either as theoretician or as practitioner. This either/or opposition has its roots in the origin of our profession, namely vocational training with its deeply ingrained anti-intellectual attitude. However, in university courses you are

obliged to think what you're doing and to reflect on your activity and not just on your own activity but what is going on around you. This is typical of the ulm approach, of which I would consider myself an exponent - an exponent of critical operationality.

So in summing up, my approach was to orient young people that did not find answers to their questions in their own context; to provide them design tools and to propagate industrial design as an autonomous activity separated from art and architecture and engineering. Not only in Argentina or Chile and Brazil, but also in other countries like Cuba where I spent 2 months in 1984 again under the contract of a United Nations consultancy job, in order to help to get into shape their ambitious project of the National Office for Industrial Design.

Q11. *In the field of Design for Development what would you consider the criteria should be for judging a successful design?*

I wouldn't say the criteria have changed, though we cannot talk today anymore about development policies. These have been abandoned. In peripheral countries today the former development policies have been replaced and dislocated by policies of financing the external debt. Finance-driven policies don't take into account local industrialisation, local needs, local populations. The present imperative is: Export or die. Whole countries live only to serve their debts – debts that grow and grow and grow provoking social misery and a potential for conflicts. Banks *'Über alles'* – that is the present dogma. In Latin America, we can observe a return to a situation similar to the agrarian feudal economy in the Middle Ages where the majority of the population lived only to make tributes to the rulers. Today whole nations mortgage their future due to the enormous amount of money they have to payback on international loans – loans of questionable value and outside any democratic control because the local populations that are supposed to 'benefit' from these loans are not asked at all. It just happens to them like a thunderstorm from above. As I said yesterday in my short presentation, the capital flow from the South to the North is bigger than vice versa. So contrary to popular opinion the North is not 'helping' the South at all, but the South is transferring value to the North. Returning to the question of the criteria, I interpret the role of design professionals as being responsible for the quality of use of artefacts and information. Designers are specialists in the concern for the quality of use of artefacts – material or immaterial. Let me add that the domain of 'quality of use' includes the formal-aesthetic dimension that is intrinsic to design and design work and not simply an add-on that you can dismiss. It includes also environmental criteria. Designers intervene in helping to assimilate the artefacts into our everyday practice. That is for me the main issue about industrial design and graphic design. So one criteria of success could be paraphrased in the words of

Brecht: to make the world more habitable – not a bad aim for a profession! Formulated in more general terms I claim that the most important criteria for successful design is any attempt to contribute towards autonomy be it the autonomy of the user, be it the autonomy of the client, be it the autonomy of the economy.

Q12.   Design for Need and Design for Development are both terms
that have been attached to this area in the past. What terms
would be most appropriate today to describe design activity in
this area?

The Design for Need and the Appropriate Technology movement cannot be removed from their historical context – their time has passed. Today the general settings, particularly the macro-economic settings have changed drastically into a situation characterised by the anything-but-clear notion of 'globalisation'.
When I was working as a consultant for different governments and private institutions or companies, the focus was on the material production, artefacts, machinery, tools, toys, and furniture. Whatever the products, the industrialisation process was linked to a hardware basis. Nowadays I would say, the hot design questions have shifted from a material culture to information culture based on information technology.

If today I was called to assist in some programme I would focus on the importance of information technology and communication, which have not been considered as decisive factors in industrialisation policies so far. I don't know of any government plan in peripheral countries that takes into account and tries to do something about this sector of communication and information technology from a design perspective that puts people in the centre. And I would say, there design has really a vast new field for activity.

Q3.   What message do you have for designers and design educators
working in the development context today?

I have always resisted the label of Design-Guru and of having up my sleeve the magic solutions. I don't have the magic solutions. What I do is to go to a particular context and then see what I can do there.
I would divide your question into three parts: Professional action, Education, and Research.

We all know that design is a scandalously under-researched phenomenon, compared with other domains of human life and academic life. As I wrote elsewhere[14] a profession, which

does not foster and promote research and incorporate research intensively, building up a proper knowledge base, has no future. We are confronted today with the challenge of constructing a proper body of knowledge about design issues with the help, of course, from many other disciplines such as sociology, computer sciences, philosophy & history, amongst others.

Particularly in peripheral countries, design research is necessary and has a legitimate function because through this research the design discourse is promoted, people start to reflect on it. I am however aware of a danger, related to what we would call esoteric research issues. If we look at some research work, which is very well done of course, obeying all of the rituals of scientific procedures, I sometimes ask myself what is the relevance of the issues that are dealt with? So my recommendation would be, stick to the local context, this is the rich stuff which cannot be substituted, which is proper. Starting from this local ground without, of course, losing the international perspective. I am definitely not advocating a parochial view of design.

Now to education. This is a very thorny question, not only in peripheral countries but also in central countries. In all countries of the periphery we can observe that design is far more rooted in the academic sector than in professional practice. It is an alarming fact that we register a demographic explosion of design courses sometimes of questionable quality for example, evening courses, which last three semesters, and then you become a designer. If you tried to do this in Medicine or Engineering, they would laugh at you! Design has the image – the unjustified image - of being an easy career. It tends to attract the wrong people.
We also face the problem of the 'banalisation' and trivialisation of design during the 90's. Under the label 'design for fun', designer jeans, designer food, designer drugs, designer hotels, designer...? I'm not against fun, but I think it's misleading to put exclusive focus on this aspect of design and designers intervention. I am definitely against the notion of design as an ancillary function of marketing.

With regard to design education I would recommend (though I know this recommendation is very difficult to fulfil) that the people in charge of the courses be persons that have professional experience. Otherwise we get into an academic closed and sterile circuit in which no innovation will occur - the so-called 'title factories'. Both design and design education lives from contact with real world problems, in searching for and accepting problems from the outside and transmitting them into the learning environment. Design education anywhere has to reassess its foundations that are often taken for granted and academized and bureaucratised. Breaking with traditional paradigms, addressing the unresolved relationship between design and sciences, getting relevant design research done, these are issues that are relevant to design in general.

Now to the professional issues: I do not feel authorised or legitimised to tell colleagues what they should and should not do. You probably know the very recommendable book 'Advice to a Young Scientist' by the British molecular biologist Peter Medawar. I think every designer should read this, it's a very clarifying book. He does not talk about design, fortunately enough, but in a typically British ironic manner gives a good x–ray of what a scientist is and should and should not do. Scientists make research, write papers, they produce knowledge and these papers are then presented in conferences and later on published in learned journals or books. He quotes from a manual of the British Society of Electrical Engineering, a manual on how to deliver a conference paper and how to prepare a text for a lecture. He states that all persons who are giving a public lecture are under certain stress. The manual recommends that if you want to feel secure then you should stand in front of your audience with 40 cm distance between your feet. Note the fantastic precision, it must be 40cm and not 38! This, of course, illustrates one of the ridiculous aspects of advice on what to do and not to do.

I would recommend the professional designers working in industry or working as professionals in their own design studio's or in public institutions, that they never forget what I would consider the basic claim of our profession: 'design for autonomy.'

I would like to end with a quote from an Argentinean writer who lived for a long time. He lived in three centuries. He reached the age of 103 years. He wrote books but more and more he desisted from publishing these books. He wrote them for his friends. He opted not to live in Buenos Aires but in a very small faraway provincial town. When he was asked why he preferred to live so far away from the fascinating metropolis of Buenos Aires he answered with a very hard phrase (and I ask you not to misunderstand me if I paraphrase this assessment, transferring it to design):
'The Centre knows nothing about the Periphery, and the Periphery does not know anything about itself '. This provocative sentence might serve as a breeding ground for reflections about the dialectic relationship between different discourses and practices of design. After all, we live in different places, but in one world!

[1] Professor Bonsiepe kindly agreed to this interview a part of the programme of the Mind the Map conference hosted by Istanbul Technical University and Kent Institute of Art & Design in Istanbul, Turkey in July 2002.

[2] James Fathers is a senior lecturer at the University of Wales Institute Cardiff. He has an active research interest in the role of design in the context of development

[3] The term periphery in the context of this article refers to those countries commonly

termed developing countries.The term was adopted by Bonsiepe as a more appropriate way of describing these geographic areas & peoples in a paper for the Design for Need Conference in 1976. Precariousness & Ambiguity: Industrial Design in Dependent Countries, In *Design for Need*. (Editors: Bicknell, J & Mc McQiston., L), Pergamon Press, London.

4   Other articles relating to HfG Ulm published by Design Issues are:
Paul Betts: Science, Semiotics and Society: "The Ulm Hochschule für Gestaltung in Retrospect". Design Issues 14 no2 (Summer 1998) :67-82.
Gui Bonsiepe "The Invisible Facets of the HfG Ulm," Design Issues 11 no2 (Summer 1995) : 11-20.

5   **Newby, S.** (1976) Ulm in a 'Peripheral landscape, *Design,* 332 40-41.

6   **Bonsiepe, G.** (1976) ibid

7   **Bonsiepe, G.** (1973): *Bombast aus Pappe,* FORM vol 61 p13-16 – also published under the title *Piruetas del neo-colonialismo* in the Argentinean journal: summa (1973) vol 67 p 69-71.

8   **Bonsiepe, G.** (1995): *Im Grünen*, Formdiskurs Issue 1. December 1995.

9   **Madge, P.** (1993) Design, Ecology, Technology: A historigraphical review, *Journal of Design History,* vol 6 p149 - 166.

10 **Bonsiepe, G**. (1999) INTERFACE: An approach to design Publisher: Jan van Eyck Akademie, Maastricht, the Netherlands.ISBN: 90 6617 212 6.

11 Since the interview Professor Bonsiepe has moved to Brazil permanently where he is teaching at the ESDI/UEERJ Escola Superior de Desenho Industrial, Universidade do Estado de Rio de Janeiro.

12 **Er, H. A. and Langrish, J.** (1992) Industrial Design in Developing Countries: A Review of the Design Literature - UF (Eds, Langrish, J.) Institute of Advanced Studies: Man chester Metropolitan University, Manchester.
Dr J Langrish has recently retired from the Art & Design Post GraduateCentre at Man chester Metropolitan University & Dr Alpay Er is an Associate Professor in the depart ment of Industrial Product Design at the Istanbul Technical University

13 **Madge, P.** (1993) Ibid

14 **Bonsiepe, G.** (2000) Design as a Cognitive Tool The Role of Design in the Socialisation of Knowledge. In the proceedings of "Design plus Research" international conference, Politecnico di Milano (May 2000).