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Brain drain and brain gain in the Alps

Mountain areas are particularly affected by brain drain – the loss of skilled intellectual and technical individuals when they move to more favourable geographic, economic, or professional environments – which is part of the wider phenomenon of rural exodus and labour out-migration (Debarbieux and Camenisch, 2011), and is only partly reduced by opportunities to commute to local economic centres (CIPRA 2007). The impact of brain drain is particularly severe with regard to university graduates. When young people do not return to their mountain valleys after attending university, this contributes to both depopulation – further causing the loss of qualified human capital that could bring added value to local development – and the overall ageing of the population.

Brain drain in the Alps is increasingly gaining attention, with recent studies acknowledging the importance of the presence of highly qualified people (Debarbieux and Camenisch 2011; Dematteis 2011). Morandini and Reolon (2010: 70, translated) found that “it is necessary that young people are offered the possibility to stay in their home villages or alternatively to go away to study and receive advanced training, but then they should be able to come back bringing along what they have learned”. Corrado (2010) notes that one reason for the fragility of remote Alpine areas is a lack of professional competence to manage development processes.

One response to the decline of mountain regions is for qualified individuals to settle in them. Thus, the opposite phenomenon, brain gain, is defined as the arrival in, or the return of highly qualified people to a given territory (Mayr and Peri, 2008). Brain gain in the Alps takes different forms. When highly qualified people leave their valleys but retain links to them, they become “ambassadors” of their regions of origin, bringing added value for their development (Rérat and Jeannerat 2011). This can be regarded as a
“distance brain gain”, a sort of “indirect gain”, which should therefore be distinguished from another type, when highly qualified individuals choose to settle in the mountains, becoming actors in local development. We could define this phenomenon as “in loco brain gain” which, because of its more direct impact on local communities, is the focus of this paper.

Existing literature identifies two sources of “in loco brain gain”. As recent studies highlight, brain gain can be linked to the arrival of immigrants: “the new inhabitants of the Alps” or “mountain people by choice” (Dematteis 2011, translated). There has been some recent detailed analysis of this phenomenon; it is clear that new population movements – including amenity migration (Moss 2006, Bender and Kanitschneider 2012) and multi-dwelling (Steinicke et al., 2011) – are partially reversing the demographic decline in certain marginal areas of the Alps.

“Mountain people by birth”, i.e. those who were born and grew up in the mountains, can also contribute to “in loco brain gain”. After a period spent elsewhere to complete their higher education, they choose to return to, and settle in, the mountains. This also appears to be a recent trend, developing in parallel with the phenomenon of the new inhabitants. Understanding the reasons behind the choices of mountain people to return, or to never come back after their studies, is essential as a fundamental basis for policies to fight brain drain and encourage brain gain.

This is the scope of the research presented in this paper. It focuses on those who have completed undergraduate and/or postgraduate studies (referred to below as “graduates”) originating from the valley of Comelico, in the Eastern Alps of Italy. The main aim is to understand the factors influencing the choice of these young people to return to their valleys of origin. Secondary aims were to understand the life choices of not only these returning graduates, but those who did not return, and those who stayed after secondary school and did not go to university (“non-graduates”). The research also examined local policies for repopulation and brain gain. From the findings, recommendations are made.

The study area: the Comelico valley

The valley of Comelico is in the north-eastern Dolomites, in the province of Belluno, on the border with Austria. It is administratively structured into five Ladin municipalities: Comelico Superiore, Danta, San Nicolò, Santo Stefano, and San Pietro (Figures 1 and 2).

As in other parts of the Dolomites, tourism is part of the economy, although not as much as in nearby valleys such as Cortina d’Ampezzo or Auronzo. Manufacturing, construction and services are the most developed sectors in the area, and the major economic activity since the early 1980s has been the production of frames for glasses (glassware). This has provided a number of very well-paid local jobs, slowing down the demographic decline, as most families had a micro enterprise at home, and could easily earn a good income with no need of high specialisation. However, this industry has experienced a slow decline since the late 1990s. The unemployment rate ranges from 4.0% (San Nicolò) to 8.7% (Comelico Superiore) (ISTAT 2012).
Figure 1. Comelico valley (Viviana Ferrario)

Figure 2. Cadore area (Viviana Ferrario)
Since the 1940s, the population has continually declined, to 7,508 in 2011 (ISTAT 2014). Nevertheless, in the last decade, the rate slowed, with a decrease of 5.9%, less than the 7% in the previous decade (Figure 3).

Figure 3. Demographic trends in Comelico, 1871-2011 (ISTAT 2014)

Remarkably, nearly half (3,597) of the residents of Comelico commute every day; 1,680 go to work in a different municipality than the one they live in (ISTAT, 2009). Not only workers, but also high school pupils commute. Comelico has two secondary schools, but pupils choosing a field of studies that is not offered in these schools have to travel at least 26 km to reach the nearest secondary school in Pieve di Cadore, outside the valley. The closest cities with universities are Udine (105 km from Comelico), Innsbruck (118 km), Venezia (150 km), Padova (170 km), Trento (170 km), Trieste (170 km) and Milano (400 km). Clearly, leaving Comelico for study is not a choice, but obligatory.

The transport infrastructure is exclusively based on the road system. The closest train stations are more than 20 km away (Calalzo in Veneto; Toblach in South Tyrol), the motorway is 60 km away, and the closest airport is 120 km away (EURIS 2004). Comelico is a remote border area, and structurally marginal. Such characteristics make the valley an interesting case study, with possible analogies with many other remote areas of the Alps.

Methodology

The research considered individuals born from 1968 to 1988, sub-divided in three groups: graduates living in Comelico; graduates who have not returned to the valley; and non-graduates living in Comelico. The research was undertaken in late 2011 and early 2012. A mixed methods approach was adopted, including a questionnaire and interviews. Although the 2011 census had recently been conducted, the results were not known, so specific investigation in the field was used to collect data regarding the target population.

Data for graduates from 1994 to 2011 were obtained from different sources. First, the monthly magazine “Il Cadore” regularly publishes the names of graduates from the valley: issues from 1994 to 2011 were consulted. Second, the lists of graduates applying
for the scholarships of the “Magnifica Comunità di Cadore” and the “Comunità Montana di Comelico e Sappada” were reviewed. 95% of the graduates apply for these scholarships. Contact details of the graduates were obtained through acquaintances in the valley, the phone book of Comelico, two articles published in two local newspapers; a page on Facebook dedicated to the research, and a blog.

A questionnaire was distributed to 323 individuals: 183 graduates and 140 non-graduates. The paper version was sent by post, distributed door-to-door, and left in three shops in the valley. The on-line version was published on Facebook and on the blog, and sent via email to the available contacts. An overall response rate of 61% was obtained.

To complement the results from the questionnaire, and allow in-depth analysis of the reasons for returning, a sample of graduates who live in Comelico was interviewed, using a semi-structured approach. The mayors of the valley’s five municipalities and seven representatives of the local economic and cultural sectors were also interviewed to obtain their opinions on depopulation and brain drain, and assess whether policy instruments are in place to address these phenomena.

**Young graduates from Comelico**

From 1994 to 2011, 251 persons born from 1968 to 1988 graduated. Of these, 104 were found to live in Comelico and 101 elsewhere. There are, however, 46 graduates whose residence is unknown: they could live in Comelico or elsewhere. Based on the lowest number (104 graduates now living in the valley), 41% of the 251 graduates returned to Comelico. It should be noted that the data collected only include those who graduated from 1994 to 2011. There may be some (although rare) cases of people who graduated in the 1990s but are older. These are not included in the analysis.

The total number of graduates living in Comelico has increased over the last four decades (Figure 4). From 1971 to 1981, the number increased very gradually, and from 1981 to 1991, only five graduates returned to the valley after their studies, probably because of the growth of the glassware industry in the 1980s. Few people continued their education after secondary school, as their families’ choices were oriented towards immediate gain, given the many opportunities for work which did not require high levels of professional expertise. In 1991, graduates comprised 0.94% of the population; by 2001, the proportion had more than doubled to 2.41% (A.N.A.P.I.A., 2011). With the decline in manufacturing, more young people had left – but many returned after completing higher education. By 2011, the percentage of graduates was estimated to be 3.53%. While the growth of the last decade is significant, it is much lower than the 2009 averages for Veneto region (17%) and Italy (20.3%) (EUROSTAT, 2012).

Graduates generally have a job corresponding to their field of studies and level of education. They are employed as engineers, pharmacists, teachers, lawyers, or in the public administration. More rarely, they have a job that is more related to their high school diploma.
To stay, to leave, or to return? What are the influences?

The quantitative and qualitative data collected through questionnaires and interviews reveal a high complexity of situations and choices among the respondents. Nevertheless, recurring issues allow the identification of certain fundamental bases for the choices of young people. Since the research focuses on “in loco brain gain”, particular attention is given to the reasons influencing the graduates who chose to return to the valley.

Job opportunities

The availability of professional opportunities is the fundamental basis of decisions to stay in, return to, or leave Comelico. 74% of the non-returning graduates stated that work has been the main reason that led them to settle elsewhere, as the valley does not offer adequate professional opportunities corresponding to their level of studies. Across all the respondents, only 40% state that Comelico needs highly qualified people within its workforce, and that the main fields of studies which could provide possibilities to find a local job are natural sciences/forestry, medicine, economics, tourism, and engineering (Figure 5).
Even graduates and non-graduates who live in Comelico have a rather negative vision of the job opportunities in the valley: 50% do not believe that opportunities for professional employment exist. However, these graduates also state that finding a job in Comelico or in the surrounding valleys has been crucial in their choice to return and settle. Commuting contributes to the maintenance of the valley's population: 58% of the interviewees identify this as the solution which allows them to live in Comelico without giving up on a job that requires a university degree.

Such results agree with previous studies on brain drain (Schmidlin, 2007; Soliva, 2007; Girardi, 2009): the availability of job opportunities is the factor attracting qualified human capital to a given territory, becoming a source of repopulation. However, additional elements make this “job factor” less obvious than it may initially appear. The responses provide at least two dimensions which strongly influence perspectives towards professional growth in the valley. These could be termed a “demotivating environment” and “uninformed pessimism”. The first refers to a sort of generalised fatalism, among both young and older people. Statements such as “there are no jobs for graduates here” or “young people have to leave” expressed by some of the interviewed local officials are quite significant in this regard. A young interviewee notes that people of her parents’ generation typically ask her questions such as “what are you still doing here? You will have to leave at one point, won’t you?” For those who live daily with such fatalism regarding the opportunities of the local context, having to leave becomes an almost inevitable idea. “Uninformed pessimism” emerges partly from answers to the questionnaire from those who had not returned. Only 28% actually looked for a job in Comelico after their studies. Thus, if the large majority of those who have settled elsewhere have not even looked for a job in Comelico, they took the unavailability of job opportunities for granted, and would have left in any case.

Quality of life

Quality of life is a second very important influence on life choices. Although many respondents highlight the difficulties linked to the marginality of the valley – particularly
difficult geographical and ICT access – 70% have a positive perception of the overall quality of life in Comelico (Figure 6). 93% of the respondents ranked the natural environment positively; 74% considered the quality of schools as satisfactory. Conversely, 84% state that public transport is not at all, or barely satisfactory, followed by cultural activities (74%) and health and social services (70%).

Figure 6. Perceptions of quality of life in Comelico, and specific factors (all respondents)

Disaggregation of the data across the different groups shows that, while 81% of the graduates and 74% of non-graduates regard quality of life as generally good, only 52% of graduates who have left share this opinion. During the interviews, graduates further detailed elements of quality of life, including the sense of safety, the human dimension of the community, the ideal context to build up a family, or security given by family heritage and house ownership:

“...In Padova, in the beginning I would feel so awkward, exactly as a rough mountain person would feel in the plains. When walking down the street and watching people’s faces, I used to look for a nod of the head... no way, see. [...] I am used to going out and greeting people, entering a shop to get groceries not just because I need bread, but because I know that I will find someone familiar behind the counter [...]”.

“...To be a child around here is fantastic. Because you open the door and you go wandering around. There is no danger”.

“...the fact that here in San Nicolò, we had a place we could stay. If you have a house here, you give it a second thought before you say, we will rent somewhere else. It’s another expense on top of the rest”.

The natural environment plays an important role in perceptions of quality of life and, for 71% of the graduates not living in Comelico, is the most important factor for which they would return. It is also one of the key reasons why non-graduates stay in Comelico (71%).

“...the bucolic side of things, it’s priceless, I dare anyone in Milan to go out after dinner for a walk in the woods...”

“...It’s because I like the environment so much, [...] I like walking the dog, getting around on foot, easy, without worries about dangers, or breathing dirty air, I like this idea of freedom and closeness with nature, I like this a lot. Say, you think, ok, one morning I feel like going to work on foot, and ok, I go down along the cycle path... I mean, these simple things, exactly the lifestyle that I like here.”
Regarding cultural activities, respondents have contrasting opinions. Of the graduates living away from Comelico, 81% state that the search for a more dynamic social and cultural life was the main or only reason to leave. Graduates living in Comelico also underline the limited variety of possible cultural activities, considered as barely, or not at all satisfactory by 74%. They mention the bars which have a predominant role in the social life of the valley:

“...Cultural life is almost inexistent. [...] if you take away the bar, where all the young and not-so-young gather, there’s nothing else, and surely it’s not a place you can call inspiring, a part from some rare conversation you can happen to have.”

Distances can become a deterrent to social life. Interviewees mention the difficulty of getting back into the car, in the evening after dinner, to drive to cultural events, which are mostly outside the valley:

“...Leaving again from here to go to Pieve di Cadore at eight thirty at night... when I just got back from Cadore in the afternoon... it needs to be something really interesting, otherwise it hardly happens”.

Nevertheless, interviewees also mention small associations, village parties, sport activities which nurture social and cultural life; for the people who have come back – often directly involved in such activities – these are important motivations to stay in Comelico.

The affective dimension: the sense of belonging

All respondents agree on the importance of the family links that bind people to the valley. Family is the reason why 81% of the graduates who do not live in Comelico would come back. 68% of the non-graduates state that family is the main cause for not having left, and 77% of the graduates who live in the valley affirm that it is a very important element in deciding to stay. Most of the interviewees state that their attachment to Comelico influenced their decision to come back to the valley, and that – especially for those who were most determined to return – it is an irrational, unexplainable reason. The affective dimension can have different forms. Some interviewees refer to the strong links to their families and friends. The majority refer more generally to their roots, their bond to the territory, the love for their land:

“...the first strong link is with the family. [...] From this derived the love for the territory. When in Trieste, I loved the city. But when I took the bus back home for the weekend, and arrived in Sappada, every time for all those years I felt the same emotion when seeing the valley opening up. [...] this is not explainable, it is what it is and that’s it.”

The feeling of belonging to a community, as opposed to the anonymity of the urban areas experienced during studies, is part of the affective dimension. Some interviewees identify this as the key element that pushed them back to a place “where they belong”:

“...here I feel that I am part of something, a group of friends, the family, society... you feel that you are part of a community [...] you know who they are, they know who you are, there is no need to explain everything...when you are out there, you are a number, a shadow passing by.”
Discussion

If the “job factor” is key in the choice of leaving or returning to the valley, the elements influencing such a choice are not simply linked to the actual existence of (qualified) job opportunities. The “demotivating environment” and “uninformed pessimism” may play significant roles, sometimes even becoming more important than the reality of job opportunities. This study was not able to evaluate the availability of jobs in the area; such research, allowing comparison with the perceptions of young people about the labour market should be undertaken, as providing accurate information about the labour market and potential career paths appears to be a key element for shaping policies to enhance brain gain.

If quality of life is generally felt as an advantage of Comelico, further questioning showed that its young inhabitants also suffer from the area’s marginality. While they can understand the limited possibilities in terms of cultural activities, they are also aware that services and transport infrastructure could be much improved.

Finally, the “roots factor” is pivotal. Roots develop from family bonds and environment, and are fundamental for those born in the mountains. The vast majority of the interviewees underlined the importance of a sense of belonging. Almost every graduate and local economic actor spontaneously stressed this during interviews. All are convinced of the importance of the sense of belonging and the nurturing of love for the territory as elements connecting people to their living environment. Some graduates have a very clear perception of this, and identify it as the key factor in their choice to return. With a feeling of belonging and a sense of pride of being part of a community – also generated by the awareness of the resources and opportunities that the territory can offer – people are less ready to give up the place where they were born.

Policies and instruments to maintain the population

The phenomenon of population decline in rural and mountain areas has been gaining attention among policy makers since the early 1990s. Policies and local initiatives have started to emerge on the national or regional political agendas of a number of countries. The degrees of development of such processes vary from country to country, as do the levels of success. Even where national or sub-national legislation does not exist, regions or smaller communities have developed local projects to favour in-migration. Examples include the regions of Limousin in France (Legrand 2000), and Marche in Italy (Umbría Training Centre 2006), and initiatives in Finland, Norway, and Spain (PADIMA 2011a).

In other countries, legislative frameworks exist at national (e.g., Ireland: Bryden 2000) or sub-national (e.g., some States of the USA: Artz 2003) level. In Italy, Law 87 (Parlamento Italiano 1994) gives the regions the right to create legislation for mountain areas. Article 19 is specifically dedicated to the possibility of creating incentives for repopulation. On the basis of these provisions, the Province of Trento promulgated Act 17 (23 November 1998) which provides measures to attract new residents to the mountain areas. No specific instrument designed to attract residents to such areas is foreseen in Veneto region (Presidenza del Consiglio, 2007). Strategic policy at the regional level is therefore rather limited, and the impact of this “emptiness” on Comelico and other marginal
mountain valleys in the region is clearly shown by the decreasing populations, mainly due to out-migration (Provincia di Belluno, 2005).

At the local level, as shown by the results of the interviews of the mayors of Comelico’s municipalities and other stakeholders, there is generally a lack of strategic vision regarding the potential for their area that qualified human capital represents. The first factor hindering joint reflection on brain drain and depopulation appears to be the lack of coordination among mayors and local actors. Furthermore, the very acknowledgement of brain drain as a problem, and of brain gain as a resource for local development is crucial. All the interviewees agree on the importance of higher education to enrich one’s own cultural background, but not all believe that higher education can have an “operational added value” for the young graduates or for the valley. For some, Comelico does not even need graduates:

“It is those who have not studied that could do something here. But no one wants to do anything. It is impossible to find people to cut the forests. There are only a few plumbers left...they are all elderly people. [...] Instead of engineers, we need those professions. Graduates do not have possibilities to come back, because we do not offer anything” (a mayor).

However, not all interviewees are pessimistic regarding the potential value of higher education to the local inhabitants.

“...I believe this is one of the concerns of Comelico but perhaps of all mountain areas...the fact that we do not have a significant proportion [...] of graduates who can reinvest their knowledge here on their territory. [...] The ideal situation would be [...] after university, to bring back the richness of knowledge to the territory. Graduates are fundamental, they bring innovation and quality. If they cumulate experiences and then bring what they have learnt in the territory, they can bring a big contribution to development [...]” (a journalist).

All interviewees agree that there is no strategic vision for the repopulation of the valley, nor specific policies for brain gain. Some Regole give some financial contributions to support the children of their members in taking university courses. Some municipalities offer contributions to young couples for their new-born babies. Other institutions offer scholarships for graduates, and organise an event where new graduates present their undergraduate or postgraduate dissertations to the local economic actors, in an effort to link the qualified human capital and local businesses. Yet these initiatives are not part of an integrated, long-term plan.

Conclusions

The Declaration on Population and Culture of the Alpine Convention (PSAC 2006) states that education is key to the revival of the Alps. Published research on brain drain from mountain areas as a key link between demographic change and local development is increasing (Morandini and Reolon 2010, Bender and Kanitschneider 2012). As demonstrated by the theme of the VIII European Mountain Convention in 2012 (Euromontana 2012), the role of young people in the mountains is high on the agenda of the institutions considering the Alps and mountain development more generally in Europe.

In the specific context of Comelico, the results of this study demonstrate that, although local people have some awareness of depopulation and brain drain, there is no integrated strategy to face these issues. In this context, some intervention areas for local or regional
policies and instruments may be defined, addressing the three main factors influencing the decisions of graduates to return: job opportunities, quality of life, feeling of belonging/roots factor.

41 Clearly, brain drain develops where there are no opportunities for highly qualified jobs. However, lack of information can also influence brain drain – perhaps even more than the reality of the job market. Thus, in addition to specific policies for job creation, a large-scale action to disseminate information about the available possibilities is essential. The scarce knowledge about the local economic sectors, and the a priori attitude of young people regarding the lack of employment possibilities in the valley, mean that local administrators and actors for local development should jointly develop and implement clear policy in this regard. At the same time, to improve quality of life in the valley, it is necessary to find ways to minimise the feelings of emptiness and geographical marginality strongly expressed by local people. New actions at the local level must be put in place, to improve these aspects where Comelico is weak in the eyes of young people: ensuring better and more efficient infrastructure – services, ICT and public transport – as well as strengthening cultural opportunities. Finally, the “roots factor” must not be neglected. This very complex element certainly needs further analysis. However, the findings do suggest that reflection is needed on the need to nurture the feeling of belonging to a territory, through better knowledge of the land, its population, its culture and the available opportunities. It is also true that in praising local anchorage, roots and belonging, one should not forget the necessary openness, exchange and renewal which are necessary to foster societal and economic innovation: an important topic for future research.

42 Finally, it is essential to increase the opportunities for exchange between local institutions and young people, to take into account their reflections on their expectations and of projects which could bring added value to the development of the valley. Young people seem to have many ideas to share, and often mentioned concrete proposals for Comelico: for example, better dissemination of the information about the local job market, the creation of cooperatives to keep services in the valley, integrated projects for the wood sector, summer schools for universities. These conclusions relate to Comelico, but are likely to have a much wider relevance across the Alps. To improve understanding of brain drain and brain gain requires a deeper knowledge of the reasons for these phenomena, which should lead to the clearer definition of adequate policies to address them.

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NOTES
1. Marginal areas (vs dynamic areas) are defined according to a set of indicators related to demography, access to services, welfare, economic development (CRESA, 2002)
2. The valley belongs to the area of the Ladin linguistic minority (according to Law n. 489 of 15 December 1999 on the linguistic minorities in Italy) (Repubblica Italiana, 1999)
3. The “Comunità Montana del Catria e del Nerone” has elaborated a “model for repopulation of the territory”, i.e. A specific project to improve the attractiveness of the area for new inhabitants (Umbria Training Center, 2006).

ABSTRACTS
One of the most significant demographic trends in the Alps is the out-migration of young people. Nevertheless, in certain areas, young people are deciding to return to their valley of origin after completing their higher education. Through research in a valley of the Eastern Italian Alps, this paper addresses this complex phenomenon, by analysing the relationships between the education level of young people, their choices to stay, return to, or leave the valley and the reasons behind these choices. Job opportunities, quality of life, and sense of belonging were identified as key factors. The research also considered the necessary policies to minimise brain drain and maximise brain gain.

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