

## **North, south, least, best: geographical location and the thinking styles of Italian university students**

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*There are economic and socio-cultural differences that characterise the north and south of Italy. A stereotype is that university students from rural southern Italy are more disadvantaged and isolated than those from the urban north. Past research has hypothesised that differences in socio-economic status impact on student learning, which is a factor of thinking style. This study set out to explore if university students from a northern and a southern Italian university report markedly different thinking style preferences. Samples of 170 students from the University of Calabria and 263 students from the University of Milan were surveyed using Sofo's (2005) Thinking Style Inventory. If economic and*

*socio-cultural differences impact on preferred ways of thinking of university students, the impacts may very well be mediated through various pedagogical or informational methods and communication technology. The results of the study did not produce all the expected differences.*

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### **Aim**

This study sought to understand more clearly the nature of thinking styles as defined in the theory of reality construction (Sofo 2005) through a comparison of thinking styles of northern and southern Italian university students. We gained this understanding through testing thinking styles against established different economic and socio-cultural variables in two regions of Italy. There are significant economic, social and political differences between the northern and southern regions of Italy. Zhang & Postiglione (2001) called for further investigation between the nature of thinking style and socio-economic status. This study aims to confirm if university students from two socio-economic regions of Italy (south and north) report different preferences for thinking styles as measured by the Thinking Style Inventory (TSI) underpinned by a theory of reality construction (Sofo 2008). In this study, we hypothesise that university students in southern Italy will report a higher preference for conditional thinking, more bound to follow rules and authority than northern students, and that they prefer to be less inquiring and less independent than northern university students. In other words, low socio-economic conditions tend to impact on thinking styles that are socialised so that southern university students will prefer more dependence on authority, less inquiring and less independence in thinking than students from the north.

### **Context**

If we consider the percentage of gross domestic product (GDP) per inhabitants (expressed in terms of purchasing power and the mean value of the EU for 2005), the northern region of Lombardy shows a value of 136.5 (€ 31,618 GDP per inhabitant) while the southern region of Calabria is equal to 67.5 (€ 15,641 GDP per inhabitant) (EUROSTAT 2008). There are also notable differences in unemployment rates, with the north having an unemployment rate of 2.4% for men and 4.3% for women, while the southern region of Calabria has an unemployment rate of 12.2% for men and 18.2% for women. Given these rates, it is not surprising that Calabria shows the highest youth unemployment rate (46.1%) in the entire European Union (Mlady 2006).

The two regions also demonstrate varying graduation rates for post-graduate students. In Calabria, SVIMEZ (2007) conducted a survey to explore the life experiences of graduates up to three years after completion of their university degree. Of the 5,800 postgraduates, 60% were employed and 50% of these were found to have left Calabria in order to work in northern Italy regions. In contrast, the Lombardi region was found to attract its labour force from other Italian regions (including Calabria) and from overseas. The survey conducted by Bosetti (2008) showed that in Lombardy in 2007, 76,000 immigrants arrived from overseas of which more than 60% were graduates and 16% had completed post-graduate studies. More than 270,000 people are known to arrive every year in Lombardy from other Italian regions, and these people are typically in search of employment and better life opportunities.

The two areas from which the surveyed students live and interact are also very different from the socio-cultural point of view, particularly with regard to the metropolitan/rural contrast. According to Simmel (1971), there are differences between metropolitan inhabitants and citizens from small to medium sized towns. The first observed

difference relates to neuro-psychological features, as metropolis inhabitants tend to receive a rich set of stimuli that is rapidly evolving and changing and a plethora of impressions milling around in their minds. In response to the numerous stimuli, people learn to react with their intellect more than with their heart. The second observed difference relates to economics, as a metropolis is usually the centre of the monetary economy. Every trade consists of money or its forms, and workers or producers use money to work for a given market and for a consumer that they do not necessarily know. This leads people to relate everything to money to develop pragmatic behaviours and to use a formal and at times 'cold' manner for human relationships. Metropolitan citizens, continuously exposed to such stimuli, tend to be anoetic or less reactive than rural citizens so that most things are considered 'normal'. Even metropolitan youth shows this indifferent and sceptical behaviour compared to youth coming from more stable and quiet places (Pittamiglio 2003). The other difference is that the metropolis attracts economic, technological and cultural resources. It offers a multitude of answers for a multitude of human needs.

Given the differences between metropolitan and rural citizens, it is useful to identify and explore some of the specific differences that arise in this study, some of which can be explained by the socio-economic and cultural background of the territories where the universities are placed and the surveyed students live. The University of Milan has been labelled one of the greatest Italian public universities, and it is placed in a city that is known as the economic and cultural capital of Italy. Milan is also the administrative capital of the Lombardy region (northern Italy) that is one of the richest regions in the European Union. Milan is also a city at the centre of a region of almost 9.5 million people, with the main part of Lombardy territory being densely populated and gravitating towards Milan (ISTAT 2007). Students from the University of Milan live in one of the richest and most innovating areas of both Italy and the European Union with different job and life opportunities from those students living in

other parts of Italy. For University of Milan students, attendance at university is not the only possible choice to achieve a better life, and some choose to attend for other reasons including passion or fashion, thus giving University of Milan students a stronger motivation than the Calabrians.

In 2005, the University of Milan had 9,485 postgraduate students amongst a total student population of 62,658 students. Over half of these (55.4%) were from the province of Milan, with a further 31.4% from the other provinces of Lombardy, 12.9% from the other Italian regions and 0.7% from overseas. This indicates that almost 87% of University of Milan students were from Lombardy (Chamber of Commerce of Milan 2007). More current data show that 23% of bachelor-level students live in Milan, 32% in the province, 31% in the region and 14% outside of Lombardy, while 20% of masters-level students live in Milan, 29% are from the province, 32% from the region and 18% from outside Lombardy (Università degli studi di Milano 2008).

In contrast, the University of Calabria is the main public university in Calabria. Calabria is located in the southern part of Italy and is known as one of the poorest regions in the European Union. The region has more than two million people living in rural areas or in small to medium -sized towns, sometimes connected to urban areas. The University of Calabria is placed in the urban area of Cosenza with a population of almost 150,000 people. The majority of students (over 90%) come from Calabria, and these students tend to live in a poor context characterised by assisted economy and the highest youth unemployment rate in the European Union. Calabria contains a plethora of small and medium-sized towns that are predominantly rural, resulting in students arriving at the University of Calabria after a life spent in a quiet and rural environment characterised by strong *clan/family* culture that encourages or coerces in them a *closed-mind*. Anecdotally, students have been found to attend the University of Calabria in the hope of more opportunities for gaining employment

as post-graduate students, for passion and personal interest and in order to escape from the *boring countryside*. Students of the University of Calabria tend to know that, due to the socio-economic conditions of Calabria as a region, the opportunity of becoming an educated emigrant is very high, thus there is a high rate of graduate and post-graduate students emigrating from Calabria for genuine chances of employment due to the incapacity of the region to absorb the newly-qualified labour force.

It is possible to suggest points of contrast between students from the northern University of Milan and those from the southern University of Calabria. Generally, the University of Milan students reside in a metropolis that encourages in them an open mind compared with their Calabrian counterparts. Environmental stimuli are one of the factors that encourage an open mind. For example, students in Milan have continuous possibilities to meet and interact with people coming from the rest of Italy, Europe and also overseas, and thus live a comparatively 'fast' life with relationships that are generally informal. In summary, the students contained in the northern group and southern group are relatively homogeneous in relation to their geographical origin, whereby students within a group attend the same study path and tend to collaborate with like-minded people. Anecdotal evidence and personal experience of the authors suggests that, while the two groups are homogeneous within themselves, they are two heterogeneous groups.

In some international surveys considering younger students and their performance (including tests such as the Programme for International Student Assessment, Trends in International Mathematics and Science Study and the International Adult Literacy Survey), Italy always has been ranked at low levels, similar to many Mediterranean countries. Considering the average performance in the four skills tested by PISA (see Table 1), we notice that the median difference between North and South shows a difference (by construction) equal to about 100 points.

Table 1: Italy PISA Competency Test (2003)

	Mathematics literacy	Humanistic literacy	Scientific knowledge	Problem solving
North West	510,118	519,794	540,335	513,131
North East	526,749	535,206	543,785	528,959
Central	487,724	503,230	516,278	498,196
South and Islands	428,135	449,723	452,278	442,413
Italy	467,549	486,109	493,855	476,113

Looking at the students' performance in mathematics, it is evident that there is a difference based on geographic distribution: in the northern regions, only two provinces show low performances, whereas in the southern regions, no province has achieved the same level as the northern regions. Bratti, Checchi and Filippin (2006) try to shed light on these results by maintaining that individual capacities are normally distributed in the country. One interesting point is the importance of local labour market conditions as a cause of the North-South gap and they find that employment probability is highly correlated with individual student performance. The higher the occupation rates, the better level of performance that the students achieve. They link this variable to the students' aspirations and expectations. In their study, where there was a high unemployment rate (30%) for young people and widespread irregular work, students felt a sense of impotence and fatality, which affects individual learning processes. The authors showed a similar negative relationship between levels of crime and student achievement.

Leonardi (1995) showed that there are two different kinds of social systems in Italy, even if they do not always fully coincide with the geographic division between North and South. One system, based on social capital, is able to influence institutions in order to make them create pressures and structures for the collective good. The second system, based on the primacy of private interest, does not stimulate institutions to go beyond the failures of the collective action.

## Literature review

IQ tests give us a measure of the power and potential of our mind, while inventories of styles of thinking give us a measure of preferences or alternative ways to use our minds. Thinking styles are preferred ways of using our mind and are useful to understand since they provide an alternative to ability and performance measures such as intelligence tests. Thinking styles have been shown to be better predictors of academic variables and employment variables (Zhang & Sternberg 1998). Preferences may also be easier to develop than our innate ability and as such provide a worthy alternative focus for improving our effectiveness and efficiency. As noted by Martinello and Cook (1994: 14), 'the more diverse the modes of thinking used by an inquirer, the greater the potential for discovery'.

Thinking style can be understood from many perspectives and five are briefly reviewed here: cognitive, personality, learning, reality construction and mental self-government. The cognitive perspective portrays style as intellectual choice using particular preferences and thinking abilities above others such as preferring to tolerate ambiguity rather than act impulsively (Harrison & Bramson 1982; Harvey, Hunt & Schroder 1961; Kagan, Joss & Sigel 1963; Kagan 1966; Pettigrew 1958; Shouksmith 1972). The personality perspective promotes style either as a fixed personality type (Myers & Myers 1980) or as an evolving preference (Gregorc 2006). The learning-centred perspective maintains that people prefer to adapt their behaviour in particular ways and learn best when encouraged to use their preferences (Dunn & Dunn 1978; Kolb 1976; Renzullil & Smith 1978). It is also possible to separate ways of thinking depending on the level of similarity or difference. For example, Vincenti (2001) provides a definition as to the difference between divergent and convergent thinkers:

... divergent thinkers have a broad vision and use imagination to generate a variety of possible solutions to a problem, whereas convergent thinkers use logical reasoning to arrive at a single correct solution that is considered the best (p.45).

Sofo's (2005, 2008) theory of reality construction postulates that our style of thinking corresponds to how we prefer to perceive and interpret the world. Thinking style also includes the way a person uses the structure or elegance of their mind to respond effectively to information or a situation. Typically, people utilise a number of styles in combination and thus develop a thinking style profile that represents their preferences across a number of different life demands. Alternatively, Sternberg's (1997) theory of mental self-government postulates that our thinking styles are structured in a similar way to general government styles. This theory defines the concept of style as a preference rather than an ability and provides a unifying framework for integrating different thinking styles. The theory is an extension of Sternberg's triarchic theory of intelligence, since it asserts the primacy of understanding intelligence in action via thinking styles as the ability to adapt rather than simply appreciate intelligence as an individual quantity (Sternberg 1988).

The theories of thinking styles posed by Sofo (2005) and Sternberg (1997) bridge the gap between the various theoretical perspectives since they emphasise the need to comprehend thinking in action within context. People develop their thinking styles from among alternative preferences which comprise a blend of contextual demand and personal preference. Sternberg (1997) maintains that thinking styles vary across tasks, situation and personalities. It would appear that styles of thinking are socialised through significant others, are teachable through the education system and are internalised based on culture (Sternberg & Ruzgis 1994). Different styles have different values based on situations, context, culture and eras. Preferences and strength of such preferences vary across individuals and their life spans, including across age, sex, work and travel experience (Zhang 1999).

In this study, the idea of varying thinking styles based on geographical location and socio-cultural economic differences is explored. In order to do so, it is first necessary to set the scene further by analysing the

varying demographics that characterise the students attending the University of Milan (northern Italy) and the University of Calabria (southern Italy), which complements the context described earlier. It becomes apparent in doing so that there are a number of key socio-economic and cultural differences between the two surveyed groups.

### **Methodology**

Samples of 263 students from the University of Milan and 170 students from the University of Calabria were surveyed using Sofo's (2008) Thinking Style Inventory. While it would have been desirable to match students perfectly in terms of level (graduate and undergraduate) and type of course, the researchers used samples of convenience. The important thing is that students were located in two distinct universities – Milan in one of the prosperous economic and fashion centres of northern Italy and Calabria located in the poor southern part of Italy.

#### **Sample from the University of Milan**

One sample involved 263 students enrolled in a variety of courses at the University of Milan in northern Italy. Three quarters (75%) of these students were enrolled in an undergraduate political science program (undertaking majors in economics and communication) which is designed for students interested in working in the business and financial industry. The remainder of the Milan sample included students undertaking a masters-level finance program or a masters-level communication major. These programs aim to develop in graduates a high level of economic knowledge including the ability to determine and tackle specific financial problems. Students are therefore expected to know the basic notions of mathematics, economics, law and management, as well as having a multidisciplinary knowledge of economics in order to operate directly in the various financial contexts.

Graduates of the courses are able to carry out autonomously the professional tasks that typify top managerial jobs – both within Italy and abroad – in organisations such as banks, insurance and management companies, pension funds, regulated markets, supervisory bodies and independent administrative authorities. The communication program is characterised by a rigorous approach encompassing the social sciences and humanities, and courses examine the research and theory of human interactions and relationships within varying contexts. Students completing the communication program typically work in areas including business leadership, entertainment and politics, though may also find employment in advertising or public relations firms. A small proportion of the sample included students completing a Masters in Nursing Management (featuring a special emphasis on professional development) in order to enhance the ability of nurses to enter organisations and engage in management and policy discussions, while the remainder were doctoral-level students in fields ranging from engineering to economics and Italian literature.

#### **Sample from the University of Calabria**

The other sample consisted of 170 students (enrolled at both undergraduate and post-graduate levels) from the University of Calabria in southern Italy. The undergraduate sample (60%) was enrolled in a Bachelor of Management Engineering degree which offers an overall view on theoretical, methodological and applicative aspects of planning, analysis, design and management of businesses information. Upon successful completion, students would be competent in mathematics, basic sciences, engineering sciences, systems and business design processes, data analysis, statistical modelling and problem solving. Graduates of the degree typically work in small and medium enterprises or public administration areas, fulfilling technical and administrative roles requiring political and/or managerial decision making such as being an energy manager,

city manager, mobility manager, security manager or maintenance manager.

The postgraduate sample (40%) was enrolled in a Master of Management Engineering degree undertaken by coursework. The course explores the technological, economic and organisational aspects of knowledge management in both organisations and communities. Specific methodologies and techniques for developing knowledge management systems, and thus supporting business decision processes, are also introduced to students. Particular attention is devoted to students' emerging ability to use knowledge modelling as a means of formally representing knowledge through logic in order to achieve expert systems planning. Graduates of the program typically apply analysis, design, management and optimisation to retail, information, production, manufacture, services, telecommunications and transport systems. They may also seek employment within business administration, business process management, areas of technological innovation and/or analysis of financial systems. A key outcome of the program was the management engineer's ability to work in different contexts: from research to systems design, and from management to the control of high technologies. The management engineer can work in both manufacturing firms (such as in purchasing, material management, production systems or logistic systems) and in service firms and public administration (such as in areas of business organisation, management control, industrial marketing, investment evaluation and risk management).

#### Survey questionnaire

The Thinking Style Inventory (TSI) measures reported preferences for stylistic aspects of intellectual functioning and is based on Sofo's theory of reality construction (2005) whereby people create their own realities through their ways of thinking. According to Sofo (2005), the name of the theory emanates from a constructivist

premise and the idea that people actively create their reality from their social interactions which are based on personally preferred ways of thinking. Interpersonal responses or interactions are based on how people like to think about issues. As shown in Table 2, people are thought to co-create their personal reality based on a profile of five different styles of thinking: conditional, inquiring, exploring, independent and creative.

Table 2: Summary of five thinking styles (Sofo 2005)

1. Conditional	Accepting what others think and say without questioning them
2. Inquiring	Asking questions to improve understanding of message or information
3. Exploring	Looking for alternatives and difference
4. Independent	Allocating priority to one's own thinking
5. Creative	Thinking in pictures to get a sense of the whole

The basic assumption of these styles is that people have preferences and different degrees of confidence and control in how they use their knowledge, attitudes and mental skills in building their reality and in dealing with information, people, tasks and daily situations through their thought processes. With regard to the first style, individuals are said to strongly rely on, and accept, what others think and say without questioning, which creates a personal reality based on a predominantly *conditional* style of thinking. When people prefer to ask questions and inquire about feelings and solutions, they are said to be co-constructing their reality through preferring to use an *inquiring* style of thinking. When people explore feelings and seek multiple perspectives, they are constructing their reality through an *exploring* style of thinking. Allocating priority to one's own thinking and relying on one's own feelings, solutions and opinions is said to be a preference for an *independent* style of thinking, whilst thinking in pictures, visualising and imagining to get a sense of reality is a preference for a *creative* style of thinking.

The styles shown in Table 2 reflect both convergent thinking (where people do not move beyond what is presented to them) and divergent thinking (where people move away from one-dimensional concrete analysis and actively synthesise information by questioning, exploring, evaluating and imagining different information as a basis for formulating and co-creating their own distinctive views about the world). Both convergent and divergent ways of thinking are necessary depending on the demands of different situations and what a person wants to make of them. For example, situations of safety or danger may be more efficiently handled through a convergence in thinking (such as following a fireman’s instructions to exit a burning building swiftly), whereas city planners may best solve a city’s traffic problems through using a divergent style of thinking and exploring alternatives.

An English-version of the TSI is provided in Appendix 1. Data provided by respondents are the end product of a thinking-reflecting process about their preferences for thinking in particular ways. The 50 items on the TSI require respondents to think about their ways of thinking. Without reflection about their own personal thinking processes, subjects would not be able to complete the inventory. The meta-thinking process required is structured for respondents since they need to reflect on their ways of thinking in a comparative mode. Respondents are asked to rank order their preferred ways of thinking, pitting five alternative thinking behaviours against each other on each of the ten items to determine their overall thinking style profile. Each item has five alternatives using a Likert-scale from 1 to 5, where 1 signifies thinking behaviour that is ‘least like me’ and 5 signifies ‘most like me’. Each of the five alternatives on each of the ten items must be ranked in order of personal preference. A weakness of self-reporting is that respondents may report a particular profile of personal preferences which does not reflect their actual thinking behaviours. There is an assumption in the TSI as with other similar inventories that respondents are accurately self-aware.

## Results and discussion

A Cronbach alpha is a coefficient of reliability or consistency, and thus it is desirable to achieve a score close to 1. A very high Cronbach alpha (e.g. 0.9) would indicate that the various items contained within a multi-item scale are indeed measuring the same underlying construct but in fact are too close to each other to be useful. Isomorphism is not desirable, but a modest level of correlation, such as a Cronbach alpha of 0.7 or 0.8, is typically regarded as acceptable in most social science research (UCLA 2008). Table 3 presents the data from this study.

*Table 3: TSI subscale Cronbach  $\alpha$  coefficients*

Subscale	Items	Northern Italy (n=263)	Southern Italy (n=170)
Conditional	1a to 10a	0.61	0.53
Inquiring	1b to 10b	0.45	0.36
Exploring	1c to 10c	0.51	0.53
Independent	1d to 10d	0.61	0.48
Creative	1e to 10e	0.75	0.59
Means of $\alpha$ coefficients:		0.59	0.50

As shown in Table 3, the alpha levels were in the modest to moderate range for all subscales except the inquiring subscale which was in the low range (0.45 for northern Italy and 0.36 for southern Italy). This is a weakness of the Italian version of the TSI and a revision of the translation could be helpful. The results on these subscales therefore need to be interpreted with caution.

Table 4 indicates the two statistically significant differences that were found when analyses were conducted on the two samples. The southern Italian sample was found to have significantly lower scores than the northern Italian sample on both the conditional and inquiry subscales. Comparatively speaking, this means that southern Italian students’ preferences for keeping the rules and taking instructions



was significantly lower than the preferences of northern Italian students (mean difference equals 1.07). The northern Italian students expressed a stronger desire for following policy and regulations than did southern Italian students. Likewise, southern Italian students had significantly lower preferences for asking questions than the preferences held by northern Italian students (mean difference equals 2.05). Hence, northern Italian students expressed a stronger preference for asking questions to improve understanding of a message or information. This difference points to a style of preferring to be more assertive than the southern counterparts.

Table 4: Means and significant values of measurement on the TSI

Thinking style	Mean for Northern Italy (n=263)	Mean for Southern Italy (n=170)	p-value
Conditional	21.08	20.01	<0.001*
Inquiry	33.59	31.54	<0.001*
Exploring	34.47	34.48	0.968
Independent	33.01	32.61	0.474
Creative	28.93	29.59	0.345

\* a difference significant at the p=0.05 level

Two factors are discussed here in terms of their impact on the results, effect size and sampling. For the conditional style of thinking, the effect size is equal to 0.2 which is a small effect size, and for the inquiry style the effect size is small to medium, 0.42. The magnitude of differences of absolute figures is small overall which means that in spite of the statistical significance of the results in the conditional and inquiry styles across the two samples, the chances of rejecting the null hypotheses are small to medium at best. Given the small to medium effect sizes, the chances are that the research hypotheses are false, thus indicating the possibility of no significant differences in the two samples across the thinking styles.

Second, sampling may have had an effect on the results in terms of selecting samples of convenience which included unmatched samples of undergraduate and post graduate students in different disciplines. The southern group had more postgraduates (40%) who are more mature and may thus influence why this group shows less preference for the ‘conditional’ style of thinking than the northern group with less postgraduates (25%). The convenience sampling method may also have impacted on the results since the samples used in the two regions were those studying social science disciplines in northern Italy and technical disciplines in southern Italy. It may well be that because of the nature of social science disciplines, students in the northern Italian group are generally more inclined to ask questions in the learning process than the southern Italian group simply because the study of social science *per se* requires more discussion than the study of technical content, and further, teaching in the two disciplines is structured to promote different learning approaches through inquiry and discussion. This could have a potential effect on why the northern Italian group exhibited more preference for the ‘inquiring’ style of thinking.

The findings of this study indicate a number of interesting points of convergence and points of divergence in thinking style among the northern and southern samples of Italian university students. First, there is a notable absence of statistically significant difference among three of the five styles. The preferences for three of the styles (exploring, independent and creative) do not vary significantly across the samples, which indicates similarities and convergence at three particular points in the profiles. These three points of union indicate that there is similarly equal levels of preference (upon comparison) for looking for alternatives and differences – in other words, a high level of preference exists among both samples for multiple perspectives in comparison to two of the other thinking styles (conditional and inquiry).

Type 1 thinking style defined by Zhang and Postiglione (2001) refers to people who prefer to challenge norms and take risks which has relationship to low preference for conditional thinking and high preference for exploring and independent thinking. This in fact describes the general thinking style profile of the samples surveyed in this study. Type 2 thinking style refers to people who tend to favour norms and be authority-oriented which has relationship to high preference for conditional thinking. In this study, there was no high preference, comparatively, for conditional thinking even though northern Italian students had higher preference for the conditional style compared with southern Italian students.

The current study does not support studies from previous decades about the relationship between thinking styles and different socio-economic status (Adorno, Brunswik, Levinson & Sanford 1950; Kreml 1977; Scarr 1984).

### **Conclusion**

The hypothesis at the outset of this paper stated that the numerous economic, socio-cultural and political differences between the north and south of Italy would impact upon the thinking styles of students from the two regions. This hypothesis was motivated by results of previous research on the impact of socio-cultural factors on learning and also by other stereotypical assumptions about the north and south. Some of these assumptions include the idea that students have more stimuli in urban living areas and their minds would be more reactive than those students from rural and poorer areas. Another stereotype is that thinking style results could be related to social and easy-going life-style in rural living where there would be pressure to follow rules since supervision would be stricter and a patriarchal culture would be likely to exist. A third stereotype arising from the knowledge that the north of Italy is rich and the south is poor is that urban students are more open-minded. This research has not supported any of these stereotypes.

The finding of interest in this exploratory study is that there are more similarities than differences among the two samples of students from northern and southern Italian universities. The statistical significance found in two of the five thinking styles was in part puzzling and opposite to what we expected. Students from the south did not express a preference for greater dependence on authority. Given the caution we have indicated on two of the reliabilities on two of the subscales of the TSI, there is still an overall firm and generally consistent result that indicates that known socio-cultural and economic factors do not impact on university students' thinking styles. This is consistent with some previous research which lent partial support for a link between SES and thinking styles (Zhang & Postiglione 2001). One argument used for a different thinking style between students from two different socio-economic levels is that students from a higher SES have more exposure to issues, discussions and evaluations through the family at home. We contend that the results of this study lend more support to the idea of the new global society which potentially exposes everyone more readily to visual stimuli and electronic means of building social capital where discussions and evaluations can occur more frequently through a system of information technology that has not been diffuse in the past.

This study has provided information on the relationship between thinking style and socio-economic differences. We found that reported ways of thinking are generally quite similar, but with two notable differences between the northern and the southern students' reported preferences for thinking. In such a case where there are differences in thinking styles based on socio-cultural differences, academics could be informed of the need to encourage in their students the development of more flexible thinking styles and to adapt their preferences in the best way possible to deal with the specific nature of problems in different situations. There is a general need to encourage students to increase their cognitive awareness and breadth of preferences for ways of thinking.

This study has involved exploratory research on the differences and whether this line of inquiry is worth pursuing in further detail. We suggest that the diffuse use of information and communication technology (ICT) is a reason why thinking styles are not so different among students from two markedly different regions of Italy. This would make for an interesting line of further research to explore the relationship between the use of ICT, as a tool for building social capital, and thinking styles. Through this research there has been a contribution to the literature on thinking styles in the following ways. First, there has been empirical evidence presented on the relationship between socio-cultural and economic differences of two regions and university students' reported thinking styles that are defined by a constructivist model of thinking styles. Second, it is not clear if thinking styles are socialised or if there are forces more powerful than socio-cultural and economic ones, such as communication and information technology, which build social capital across geographical regions and impact on thinking styles.

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Appendix 1

	COLUMN A	COLUMN B	COLUMN C	COLUMN D	COLUMN E	
1	When I think I like to:	_be passive	_ask questions	_seek options	_direct my own thinking	_imagine
2	I think best when I:	_keep my views to myself	_ask about the issues	_experiment	_feel responsible for my own actions	_use images
3	When I am thinking I:	_want to be told	_take initiative	_challenge ideas	_offer my own suggestions	_tend to rehearse mentally
4	Thinking is best for me when I	_accept the views of others	_look for an explanation	_implement different ideas	_think for myself	_think in pictures
5	When I think I:	_am careful to think the right things	_venture out from what I usually think	_look at all sides of issues	_think things out for myself	_visualize new experiences
6	When I am thinking I am:	_sticking to what I know	_questioning what I know	_trying new things out	_expressing my opinions	_inventing opinions
7	I think best by:	_accepting views	_doubting views	_discovering views	_deciding my own views	_picturing issues
8	When I'm thinking I like:	_relying on others' feelings	_questioning feelings	_exploring new feelings	_relying on my own feelings	_imagining new feelings
9	I think best when:	_accepting solutions	_questioning solutions	_searching for new solutions	_offering my own solutions	_imagining solutions
10	I do my best thinking when I:	_say what others think	_ask questions to help me understand	_try to explore all sides	_say what I think	_describe what I can visualise

### **About the authors**

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