

# Selected College of Agriculture Students' Attitudes about Agriculture: Eurocentric Origins<sup>1</sup>

**Lauren Rouse<sup>2</sup>**  
**Bryan Broadcasting Corporation**  
**College Station, TX**



**Tracy Rutherford<sup>3</sup> and Gary Wingenbach<sup>4</sup>**  
**Texas A&M University**  
**College Station, TX**

## Abstract

Eurocentrism suggests European ideologies provide the only viable sets of beliefs for understanding the world. Such belief systems were carried to America, shared from one generation to another and may continue to unduly influence U.S. college students' beliefs about the world today. The purpose of this study was to determine college students' Eurocentric attitudes about North American and European agriculture. Results indicate that students had Eurocentric attitudes about agriculture. Upperclassmen held less Eurocentric attitudes than did underclassmen. Students generally agreed and sometimes strongly agreed with the 16 Eurocentric propositions about North American and European agriculture. Future research should include a longitudinal study of changes in the formation of Eurocentric attitudes about agriculture, as students advance from secondary to post-secondary education. Specific investigations are needed to determine if colleges of agriculture perpetuate Eurocentric ideals through their institutional foci and faculty body.

## Introduction

Many careers in the U.S. agricultural industry are viewed as low-paying, hard-labor and menial jobs. Those misperceptions may be tied to European origins (i.e., pilgrims' puritan beliefs carried to America) and/or outdated traditionalistic family stories of life on the farm. Agricultural industry careers transcend traditional production functions found on farms and ranches.

Our future necessitates a well-trained workforce to address challenges in agriculture. In December 2012, the President's Council of Advisors on Science and Technology (PCAST), characterized those challenges as "...new pests and pathogens, controlling agriculture's environmental impacts, health and nutritional concerns and international food security" (Holdren and Lander, 2012, p. iii).

The PCAST Report to the President on Agricultural Preparedness and the Agriculture Research Enterprise included an admonition regarding the U.S. agricultural industry's image problem; "...the best students, particularly in the natural sciences, do not view agriculture, or agriculture-related research, as an attractive career option," which has the entire agricultural industry "facing a knowledge and workforce deficit" (Holdren and Lander, 2012, p. 41). Are American students' views about agriculture based on traditional production functions and/or European origins?

Eurocentrism creates a permanent core and a periphery from which socio-economic, cultural and political ideas disseminate into the world (Persaud et al, 2008). Fals-Borda and Mora-Osejo (2003) wrote that "*Eurocentrism proposes the western mode of life, economy and culture as a model to be adopted by the rest of the world, as the only solution to the challenges of our times*" (p. 32). Although Blaut (1993) rejected Eurocentrism, he argued that Eurocentrism is a label used to group all beliefs that Europeans are superior to non-Europeans.

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<sup>2</sup>Production Artist, 2700 Rudder Fwy., Suite 5000, College Station, TX 79845, laurouse@gmail.com

<sup>3</sup>Associate Professor, Department of Agricultural Leadership, Education and Communications, 2116 TAMU, College Station, TX 77843-2116, trutherford@tamu.edu

<sup>4</sup>Professor, Department of Agricultural Leadership, Education and Communications, 2116 TAMU, College Station, TX 77843-2116, wingenbach@tamu.edu

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Eurocentrism developed during the Enlightenment period when individuals perceived European traits as universal traits appropriately applicable to all humanity; once the idea was founded, “the rest of the world” mentality flourished (Peet, 2005). Blaut argued that Eurocentrism is embedded culturally and noted that believers still retain and propagate Eurocentric beliefs despite minimal rationale for why those beliefs are accepted. Eurocentrism beliefs are based on several myths that Anglo-Saxons and Americans have maintained for hundreds of years, as Caldwell (2006) suggested in writing,

Today there are many myths of American superiority and most Americans devoutly believe their nation to be superior to all others in countless ways. They are convinced of the superiority of America’s national culture, ideology and values. They are certain that American political, social and economic institutions are superior to all other systems and that the sum of it all, “the American way of life” will inevitably constitute the final destiny of mankind. (p. 139–140)

Hughes (2003) believed that national stories, or national myths, are created to explain why Americans express love toward and faith in the U.S. and “affirm the meaning of the United States” (p. 2). Resultingly, American myths and Eurocentric attitudes continue to be transferred to new generations. Such attitudes may be found in academia at many levels.

In a study of 701 college students, Clarke (2004) found that students’ perceptions of their own global awareness and attitudes about internationalism reflected ideas of Eurocentrism. A majority (71%) of students responded affirmatively to the statement that the U.S. was superior to other countries in the world; also, ethnocentrism increased with students’ ages. However, Persaud et al. (2008) found that Eurocentric attitudes of students enrolled in agriculture programs diminished with age. Persaud et al. found that freshman (1st year students) displayed higher levels of Eurocentric views than did seniors (4th year students).

Although many of today’s land-grant universities are known for their agricultural roots, many land-grant colleges of agriculture have fewer students with agricultural backgrounds now than in previous times (National Research Council, 1995). The National Research Council (1996) noted that broadening and diversifying programs in colleges of agriculture is important because it has a “*potential payoff for the colleges’ traditional agricultural clientele because expanding input and participation by diverse groups is an important means of broadening the constituency base for food and agricultural science and education*” (p. 25). One way colleges of agriculture are addressing

change in student populations is by offering a broadened curriculum that reflects the diversification and global changes in today’s agriculture sector (National Research Council, 1996).

Persaud et al. (2008) argued that the nationalistic notion of traditional farming production practices taught in agricultural education programs could lead to biased students at land-grant universities. Persaud et al. suggested that “*students’ Eurocentric views on agriculture are probably associated with socio-cultural conditioning embedded historically by precept and example in the (essentially neo-European) North American psyche as proposed by Hughes (2003)*” (p. 32).

Irani et al. (2006) noted that U.S. agriculture students exhibited limited international experience and backgrounds. “*Therefore, it is crucial that [U.S.] agriculture students become more knowledgeable about other countries, their cultures, economy and roles in world affairs*” (Zhai and Scheer, p. 40). U.S. students may or may not have nationalistic attitudes about American agriculture with less or more biased zeal than South African students have about South African agriculture. However, educators in colleges of agriculture (also known as Faculties of Agriculture) can help students separate fact from fiction when learning about and understanding basic premises such as “the soils in North America/Europe are more fertile than in the other continents.” Students can replace mythological belief with scientifically verified fact. This research is a first step in understanding the prevalence of students’ Eurocentric attitudes about agriculture.

## Methods

The purpose of this study was to determine selected U.S. college students’ Eurocentric attitudes about agriculture. The research objective was to identify differences in college students’ Eurocentric attitudes when compared by grade classification. This study was deemed exempt under federal regulation 45 CFR §46.101(b).

The study population (N = 359) included underclassmen (1st and 2nd year students) and upperclassmen (3rd and 4th year students) enrolled in an introductory course about modern agriculture and natural, human and scientific resources in the College of Agriculture and Life Sciences at Texas A&M University. The study population included students from a variety of majors and classifications. The university e-mail system produced an accessible population (N = 166) from which a stratified random sample (n = 91) was derived. The sample was determined using Dillman’s (2007) methods for deriving a probability sample. The researchers used an 80/20 split with a 5% sampling error

**Table 1. Sixteen Eurocentric propositions regarding North American/European Agriculture as proposed by Landes (1998) and reproduced by Persaud et al. (2008).**

Explanation	Keywords
The climate of North America/Europe is more favorable for agriculture than are the climates of other continents.	Climate favorable
The climate of North America/Europe is better for human comfort than are the climates of other continents.	Climate comfortable
The soils in North America/Europe are more fertile than in the other continents.	Fertile soils
North America/Europe suffers less from natural disasters than do other continents.	Less natural disaster
North America/Europe was historically less ridden by human diseases than other continents.	Less disease-ridden
The stability of North American/European agricultural productivity can largely be explained by the differentiation of these continents into distinct ecological zones.	Ecological zone stability
Historically, North America/Europe avoided land degradation caused by overpopulation.	Land degradation / overpopulation
Culturally, North America/Europe avoided overpopulation because their capitalistic/free enterprise ethic counteracted such tendencies.	Overpopulation / capitalistic ethic
North American agriculture flourished because European immigrants were particularly inventive.	Inventive immigrants
North American agriculture flourished because European immigrants were particularly venturesome.	Venturesome immigrants
North American agriculture flourished because European immigrants were particularly capable of scientific thought.	Scientific immigrants
North American agriculture flourished because European immigrants held strongly democratic values.	Democratic values
North American agriculture flourished because European immigrants' family structure was particularly well suited to agricultural development.	Family structure
North American agriculture flourished partly because European immigrants brought with them free market institutions.	Free market
North American agriculture flourished partly because European immigrants brought with them the institution of private property rights.	Private property
The dominance of Christianity among European immigrants contributed significantly to North American agricultural development.	Dominance of Christianity

Note. Keywords adapted from those created by Persaud et al. (2008).

at a 95% confidence level (Dillman). All classifications — freshman, sophomore, junior and senior — of males and females, ranging in age from 18 to 25 were in the sample. Repeated e-mail contacts, using Dillman’s methods, produced a response rate of 68% (n = 62).

Data were collected with an online questionnaire that measured students’ Eurocentric attitudes about agriculture using a Likert-type five-point scale. Students responded whether they strongly agreed, agreed, had no opinion, disagreed, or strongly disagreed with 16 Eurocentric statements about agriculture (Table 1). The instrument was adapted from Persaud et al. (2008). Example statements include: The climate of North America/Europe is more favorable for agriculture than are the climates of other continents; and The soils in North America/Europe are more fertile than in the other continents.

Descriptive statistics, modeled after the procedures by Persaud et al. (2008), were used to analyze the data. Radar plots, also called spider charts, were created to show comparisons and/or commonalities between the Eurocentric statements about agriculture.

## Results and Discussion

Participants’ included 44 underclassmen (1st and 2nd year students) and 18 upperclassmen (3rd and 4th

year students). Most (n = 48) reported themselves as White/Anglo-American. Thirty-five were female. Thirty-eight had never lived on a farm or ranch. Forty were in the college of agriculture; 21 were from other colleges in Texas A&M University. Figures 1 and 2 show students’ aggregated percentages of responses (positive, neutral and negative) for the 16 Eurocentric statements about North American/European agriculture (Landes, 1998).

## Underclassmen (1st and 2nd Year Students) Beliefs

A comparison of aggregated differences for the 16 Eurocentric statements about agriculture when analyzed by underclassmen status is shown in Figure 1. Each Eurocentric statement is represented as a number within the radar plot and is labeled by the researcher-assigned keyword. Underclassmen agreed more than disagreed with the statements pertaining to favorable climates, comfortable climates, fertile soils, less natural disasters, less disease-ridden society and

dominance of Christianity; they agreed slightly more than disagreed with the statement about venturesome immigrants. Why are these beliefs prevalent among underclassmen?

The case can be made that underclassmen have not had their belief systems challenged to the degree that upperclassmen have; certainly core curriculum courses on climate, soils and social development would enlighten most about the fallibility of believing in North American/European superiority in such matters. It is unlikely that many underclassmen opposed or did not share parental views about Christianity, if they considered themselves Christians at the time of this research, therefore their agreement that the “dominance of Christianity among European immigrants contributed significantly to North American agricultural development” is understandable and would not be changed within the first few years of college experience. Likewise, their agreement with the statement that “North American agriculture flourished because European immigrants were particularly venturesome” may be a debatable belief (Figure 1).

For all other statements (6, 7, 8, 9, 11, 12, 13, 14 and 15), underclassmen had greater levels of disagreement than agreement. Persaud et al. (2008) found similar results, noting that underclassmen exhibited higher levels of Eurocentrism. However, some inconsistencies



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exist in underclassmen's levels of Eurocentrism about North American/European agriculture. For example, why would underclassmen not have similar attitudes about inventive or scientific immigrants as they did for venturesome immigrants? That is not to say that because one is venturesome he/she is also inventive or scientific, yet one who is inventive or scientific may be viewed as

someone who is venturesome. The land-grant college/university experience should inform and/or change belief systems, particularly pertaining to science and innovation (inventions). More research is needed to better understand underclassmen's disconnect between these beliefs.

A similar incongruent outcome was noted for differences in underclassmen's beliefs between dominance of Christianity (agreed) versus family structure and democratic values (disagreed).

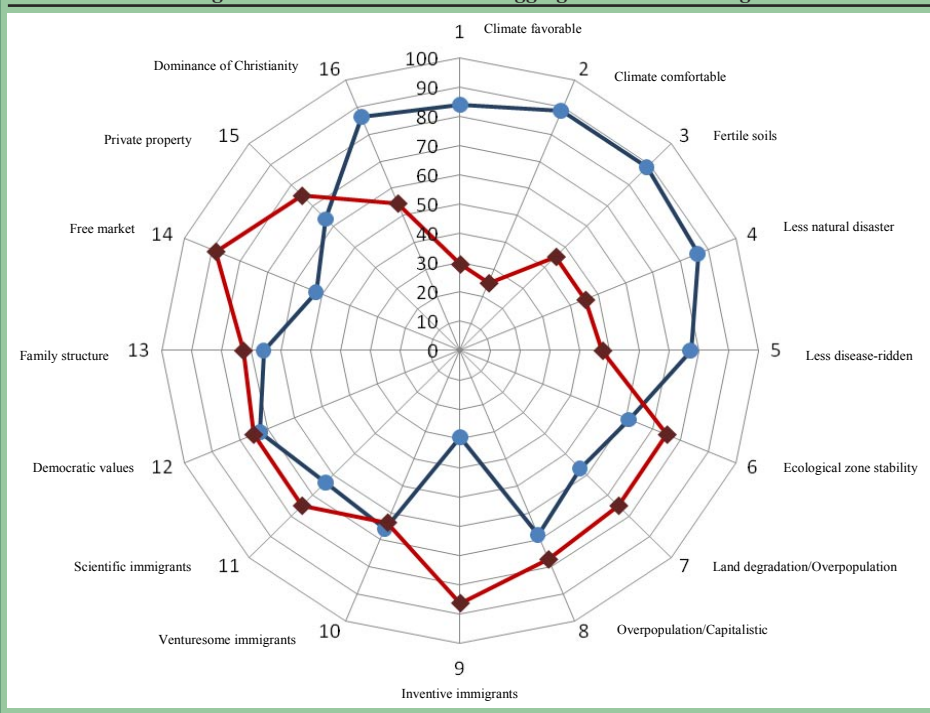
Again, we do not attribute one's agreement with the dominance of Christianity (dominance of Christianity among European immigrants contributed significantly to North American agricultural development), as being disconnected (disagreement) with beliefs about family structure (North American agriculture flourished because European immigrants' family structure was particularly well suited to agricultural development) and democratic values (North American agriculture flourished because European immigrants held strongly democratic values). Can one have opposing ideals, that is, to be in agreement with Christian beliefs, which typically promote family structure and democratic values (e.g., social norms, rules, etc.), but disagree with statements about the role of family structure and democratic values playing a role in the advancement of North American agriculture?

Many reasons may contribute to explaining inconsistencies in belief systems; agriculture educators at the university level should continue to investigate these matters, especially how such beliefs may affect learners' attitudes toward science and technology-related issues. We need to better understand how these underlying beliefs may impact the teaching and learning processes.

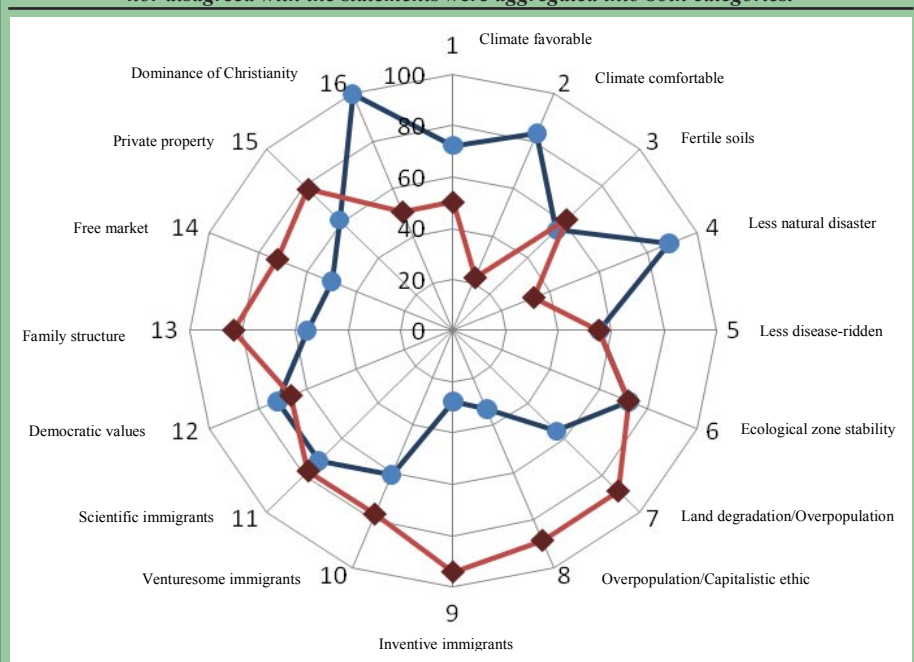
### Upperclassmen (3rd and 4th Year Students) Beliefs

Overall, upperclassmen tended to disagree more than agree with the

**Figure 1. Radar plot comparing aggregated percent of underclassmen who agreed (circles) or disagreed (diamonds) with 16 Eurocentric propositions (Table 1) about North American and European agriculture. Students who neither agreed nor disagreed with the statements were aggregated into both categories.**



**Figure 2. Radar plot comparing aggregated percent of upperclassmen who agreed (circles) or disagreed (diamonds) with 16 Eurocentric propositions (Table 1) about North American and European agriculture. Students who neither agreed nor disagreed with the statements were aggregated into both categories.**



proposed Eurocentric statements about North American/European agriculture (Figure 2). More upperclassmen agreed, rather than disagreed, with statements pertaining to favorable climates, comfortable climates, less natural disaster and the dominance of Christianity. Although there are similarities to underclassmen's beliefs, upperclassmen had less variability in all 16 statements (Figure 2). Several reasons, including age, maturity levels, coursework and broadened perspectives through interaction with peers and professors could explain these results. According to our data, we need to stress how climatic conditions worldwide are favorable for different crops in each geographic region and how the climate of North America/Europe may not be more or less favorable for human comfort than it is in other world regions.

Upperclassmen tended to disagree more than agree with most of the other statements (7, 8, 9, 10, 13, 14 and 15). Persaud et al. (2008) found a narrowed representation of Eurocentric attitudes among upperclassmen in their study. Narrowed views, for any particular subject, may not be the most desired effect of a college education, especially if it is to facilitate or encourage lifelong learning. Do land grant colleges of agriculture reinforce, rather than broaden, students' pre-college views of American agriculture through curricula or instructors' beliefs about the American agricultural industry? Research into these factors may help college of agriculture educators' better understand and adjust, curricula and presentation of their own beliefs to provide a balanced approach to students of agriculture.

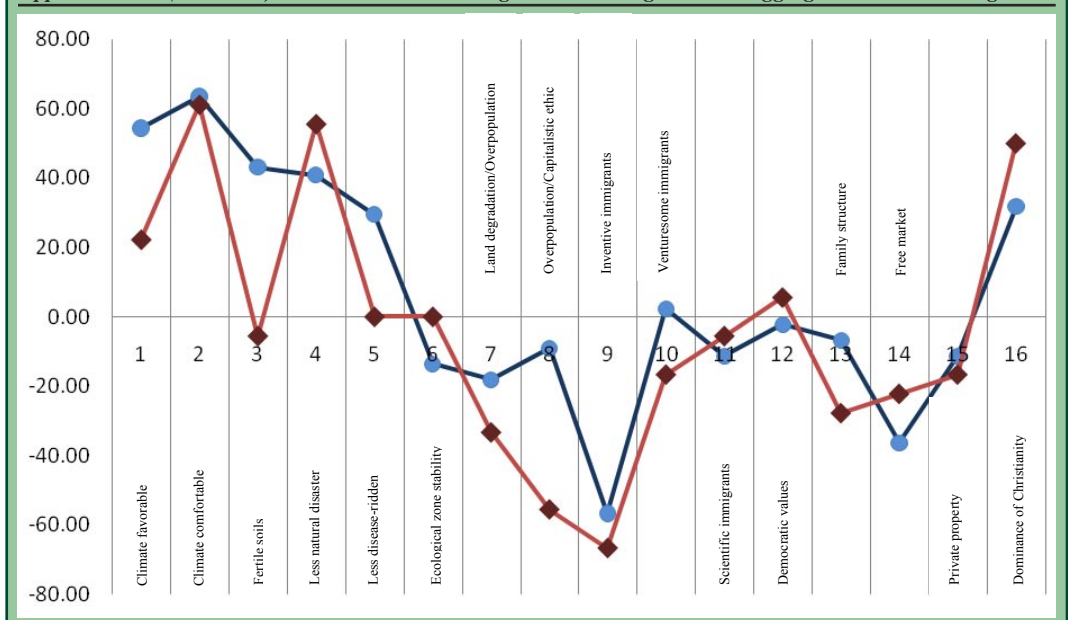
### Students' Agreement/Disagreement with Eurocentric Statements about Agriculture

The percentage differences between agreement and disagreement levels for underclassmen and upperclassmen was examined (Figure 3). More agreement than disagreement was plotted above the zero line, while more disagreement than agreement was plotted below the zero line. Distances above or below the zero line represent the magnitude of that difference. Underclassmen and upperclassmen generally held the same beliefs for each statement (Figure 3).

The intensity of differences (agreed vs. disagreed) was greater for both groups when examining the statements for favorable climates, fertile soils, less disease-ridden society and overpopulation/capitalistic ethic. Climatic, soil and societal differences were described earlier, however the overpopulation/capitalistic ethic statement (Culturally, North America/Europe avoided overpopulation because their capitalistic/free enterprise ethic counteracted such tendencies) is notable in that most underclassmen may not have considered European population densities and/or confused their home counties in Texas when responding to this statement. Had underclassmen considered those two factors separately, they would have been hard pressed to agree more than disagree because European population densities (38/44 countries with >36 people/sq.km., Index Mundi, 2012) exceed Texas' mostly rural landscape (35.88 people/sq.km., Worldatlas.com, 2008).

This minimal difference of Eurocentric attitudes between percentages of agreement and disagreement for underclassmen and upperclassmen was seen in others' research (Persaud et al., 2008; Zhai and Scheer, 2004). Persaud et al. found that freshmen's (1st year students) differences followed the same trends as those of seniors (4th year students), with seniors tending to fall below the zero line. Zhai and Scheer (2002) posited that agriculture students had moderate global perspectives. These findings supported others (Bruening and Frick, 2004; Irani et al., 2006; Zhai and Scheer, 2002) who found that certain elements of ethnocentrism increased as students became older. Insights into the causes for these outcomes should be investigated in future studies.

Figure 3. Percent agreeing minus percent disagreeing with 16 propositions for underclassmen (circles) and upperclassmen (diamonds). Students who neither agreed nor disagreed were aggregated into both categories.



### Conclusions

Did college of agriculture students have Eurocentric views about American agriculture? Did traditional production function views about agriculture exist in college of agriculture classrooms? Did students believe that North American/European agriculture was superior to other regions' agriculture? For the students participating in this study, the answer is yes to all questions. Now, how can college of agriculture educators change these answers to avoid Holdren and Lander's (2012) warning (the best students, particularly in the natural sciences, do not view agriculture, or agriculture-related research, as an attractive career option)?

Future research with larger, more representative samples, to determine the specific origins of students' attitudes about agriculture, particularly how those attitudes may be aligned with mythological and/or romanticized views of bucolic European agricultural scenes, is needed. The more we know about students' attitudes of agriculture, especially if those attitudes are fixated on "production only functions," the better we can modify curricula to express unique agricultural contributions from other world regions. The National Research Council (1996) advised colleges of agriculture to offer students broadened curricula focused on global changes in the agriculture sector to help students think about the agricultural industry beyond traditional images of agricultural production.

There is a possibility that college students' attitudes about agriculture are influenced by faculty teaching those students. Despite scientific facts (i.e., worldwide soil types' production potential) that contradict mythological views (e.g., soils in North America/Europe are more fertile than in the other continents), faculty may be perpetuating their own Eurocentric attitudes. Additional research on faculty members' attitudes, especially as it relates to Eurocentrism, will expand our understanding of why such attitudes about agriculture continue to persist in highly educated professors and scientists of agriculture.

Selected students' Eurocentric attitudes about agriculture differed slightly between underclassmen and upperclassmen. Two statements (fertile soils and overpopulation/capitalistic ethic) showed more intense differences in agreement and disagreement between classifications. This observed change supports the ideas proposed by Caldwell (2006), who argued that many Americans are certain that American political, social and economic institutions are superior to others.

We did not attempt to determine specific factors influencing students' Eurocentric attitudes about agriculture. Course curriculum, maturity and socio-economic background could be influencing factors.

Students' non-classroom experiences such as study or research abroad programs, internships, etc., could be influencing their attitudes, cultural values and beliefs about American agriculture. Agricultural employers need globally-minded, culturally aware employees who can help the industry remain competitive in global markets. Therefore, additional research is needed on the student's complete collegiate experience, especially as it pertains to shaping one's attitudes about the agricultural industry. Clarke's (2004) research (foreign language study, frequency of visits abroad, study in courses of non-Western civilization and involvement with a person from another country) provides a good starting point.

Irani et al. (2006) found that agriculture students had limited international exposure and argued that these students needed to become more knowledgeable and versed in agricultural economics, affairs, cultures, etc. Thus, future research should include a longitudinal study of changes in the formation of Eurocentric attitudes about agriculture as students advance from secondary to post-secondary education. How much is known about the impact on students' Eurocentric attitudes about agriculture from their participation in the National FFA or 4-H international youth programs? Research is needed to understand the role those programs could play in helping students develop global-minded attitudes about American agriculture.

When possible, FFA and/or 4-H international youth programs and curricula should be introduced as international agriculture components earlier in the educational system. For example, middle or high school science or agricultural education teachers could invite international students from colleges of agriculture to speak in their classes. University students from non-North American/European countries could present talks about agriculture in their homelands. The National Research Council (1996) noted that diversifying pre-college agriculture education programs begins with incorporating participation from diverse groups because it broadens the scope of constituents of agriculture science and education. As such, including samples of pre-college students in future studies would help researchers more effectively test familial factors affecting students' Eurocentric attitudes about agriculture.

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