

SOTIROPOULOS, Leonidas (Enero/Julio 2011). Apprenticeship in a traditional greek office environment. *Revista Educação Skepsis*, n. 2 – Formação Profissional. Vol. III. La formación profesional desde casos y contextos determinados. São Paulo: skepsis.org. pp. 1936-1953

url: < <http://academiaskepsis.org/revistaEducacao.html>> [ISSN 2177-9163]

### ABSTRACT

Examining with an ethnographic eye the organization and apprenticeship in a traditional Greek office, aspects of the workings of situated learning and legitimate peripheral participation are unearthed. Beginning with the keeping of established working routines, an employee moves towards showing his/her ability to implement and provide solutions useful for the firm. The process through which such situated learning is accomplished, passes through the establishment of a relation of trust between employer/employee, entailing that the apprentice can be trusted to perform the tasks allotted to him/her in accordance with the firm's interests and will "get the job done". Elements from such a study could, perhaps, be usefully incorporated in a program of Vocational Education and Training, so that the latter could be closer to meeting the needs of a specific cultural and economic milieu. An instance is thus being studied of the relation between specific cultural norms and circumstantial business training needs.

**KEY-WORDS:** apprenticeship, education, ethnography, trust, work

### RÉSUMÉ

En examinant d'un point de vue ethnographique l'organisation et l'apprentissage au sein d'un bureau grec traditionnel, nous avons mis au jour différents aspects du travail d'apprentissage en situation et en participation périphérique légitime (legitimate peripheral participation). En commençant par se conformer à des routines de travail établies, un(e) employé(e) peut montrer progressivement son/sa capacité à innover et à fournir des solutions utiles à l'entreprise. Le processus à travers lequel un tel apprentissage en situation est accompli, passe par l'établissement d'une relation de confiance entre employeur et employé(e), relation dont la conséquence est que l'apprenti(e) pourra se voir confier des tâches en accord avec les intérêts de l'entreprise, et ainsi pourra "faire le travail comme il faut". Des éléments de cette étude pourraient être utilement incorporés dans un programme de type VET (Education des vocations et stages), de sorte que celui-ci puisse correspondre davantage aux besoins d'un milieu culturel donné. Ainsi l'étude porte sur un cas particulier de relation entre normes culturelles spécifiques et besoins circonstanciés du stage en entreprise.

**MOTS CLÈS:** apprentissage, éducation, ethnographie, confiance, travail

**APPRENTICESHIP IN A TRADITIONAL  
GREEK OFFICE ENVIRONMENT**

**APPRENTISSAGE DANS UN ENVIRONNEMENT  
DE BUREAU GREC TRADITIONNEL**

Leonidas Sotiropoulos<sup>1</sup>

The examination, with an ethnographic eye, of how apprenticeship operated in a traditional Greek office during the '60s - '70s, brings up some points that could perhaps be of interest to someone concerned with the bearing of local cultural values and tendencies on potential vocational training. The examination of a particular instance, furthermore, could maybe contribute to the more general discussion on the relation between specific cultural norms and circumstantial business training needs.

**GUILDS**

Though, as already mentioned, our focus is on the recent past, reference to apprenticeship's functioning in the wider Greek geographical area during the past centuries could provide a historical background that, though not directly related, could give some diachronic depth to our synchronic description.

---

<sup>1</sup> Studied anthropology at Oxford University. Presently Associate Professor of cultural anthropology at the University of Patras / Greece (Department of Early Childhood Education). E-mail: Isotir@upatras.gr

As far back as Byzantine times, trades and vocations were organized in groupings. The Byzantine Emperor Leon VI the Wise (886-912 A.D.), legislated on the organization of such guilds.<sup>2</sup> Such craft and trade associations (guilds) existed throughout the subsequent Ottoman rule, and in fact started to deteriorate at the end of the 19<sup>th</sup> beginning of the 20<sup>th</sup> century. Nearly all vocations were organized along these lines; jewelers, masons, shoemakers, housepainters, woodcarvers were some of the occupations that operated through guilds (called *isnafia* or *synafia*). These guilds had a locus, and were composed of members from the same community. Ioannina, a city in northwestern Greece had 37 guilds in 1840.<sup>3</sup> The activities of such groups were not, however, necessarily limited to a certain region. The masons from the villages of Epirus traveled yearly and were responsible for the building of a large percentage of the houses in the Greek mainland.

Fixed rules governed relations between members of *isnafia*. Apprenticeship in such guilds was clearly regulated<sup>4- 5</sup>. An apprentice (called *tsiraki*) entered the workshop of a member of the guild, and learned by serving the patron/master (called *mastoras*), usually at the beginning by doing petty auxiliary jobs. In some cases, for a period of time -sometimes up to two years- he was unpaid. It seems that the apprentice, while performing auxiliary petty tasks, learned by

---

<sup>2</sup> CATZIMICHALI, Ageliki (1953). Morfes apo tin somatiaki organosi ton Ellinon stin othomaniki aftokratoria: Oi syntexnies - ta isnafia. *L' Hellenisme Contemporain*. Athens.

<sup>3</sup> Id., CATZIMICHALI, 1953.

<sup>4</sup> EFTHIMIOU, Maria (2003). Oi syntexnies. I kratiki organosi texnon ke epaglmaton. *Istoria tou Neou Ellinismou 1770-2003*. Athens: ellinika grammata. pp. 329-330

<sup>5</sup> TONDOROV, Nikolai (1983). *The Balkan City 1400-1900*. Seattle & London: University of Washington Press.

observing the master (shadowing him one may say) in his daily activities. It could be argued thus that the master taught through what he was, and the apprentice learned by being present, through the witnessing of such acts. Once the training of an apprentice was deemed by the *mastoras* to have been completed, the *tsiraki* acquired the status of a *kalfas* (journeyman). At some point -in some *isnafia* once a year- a *kalfas* could petition, with the consensus of his master, to become an independent member of the guild.

The activities of such guilds were not limited to monitoring economic transactions and labour relations; the well-being of its members and the community they belonged was looked after. Churches, schools, hospitals were being built, but more importantly the members of the *isnafi* had its protection in moments of need (payment of outstanding debts, illnesses, etc). A master was also responsible for the wellbeing of the persons working for him. Under these circumstances, a crucial relation between master/apprentice had to be forged; a need we will also meet when discussing office labour relations in a traditional office in more recent times.

Though, as already mentioned, such working organizations deteriorated about a hundred years ago, shreds of a similar mentality were still to be found in working relations in Greece, up till a few decades back. In the city of Patras, for instance, on the 1<sup>st</sup> of January, the first day of the Year, shopkeepers and office-owners used to open their premises, in the morning after church. They stayed there for a while, and then traversed the street/area where similar businesses were located and exchanged greetings for a good and profitable year, with other members of their trade. This can be seen as an expression of their sense of belonging to the same group,

with common interests, aims and rules of behaviour. The idea that an employee entered a business/firm as a trainee/apprentice was also part of the business mentality of that period, as was the concept that he could climb up the hierarchical ladder in that firm, if he was deemed competent. In cases of illness, need, even in personal problems an employee could solicit the employer's support, both economical and moral.

### **A TRADITIONAL GREEK OFFICE ENVIRONMENT ('60S-'70S)**

We shall examine, in our present article, how a traditional office did manage its organization -the particular type of office under study was considered successful in that respect. Focus will thus be put on the examination of a type of small office business that existed in Greece during the '60s and '70s. By considering this type of office as traditional, we express the prevalent opinion that it existed also in previous decades and perhaps was associated with the guilds' mentality we previously discussed. Instances of such an office type have been identified in the urban centers of Athens and Patras. My data comes from observing the functioning of a few such units in the '70s, participating in their daily work, but also from discussions and ethnographic interviews I have held with persons that have worked in such business offices in earlier times. It is not presumed this was an office system uniformly and universally adopted throughout Greece. Or that it was applied always in the most efficient way. However, since such an organization system did exist, we are content with examining its functioning and the apprenticeship it offered to

whomever entered it. I will present such an office in an idealized positive abstract form; hence the description does not correspond exactly to one specific firm, but, incorporating similar elements from several few, tries to construct a composite description that could lead us to a model. Furthermore, it portrays the model at its best, sidestepping eventualities of possible malfunctioning.

Let us be transported thus to a small, services oriented, business office in the late '60s early '70s. I worked in such an office - an elderly man told me once- for a few years only, I couldn't stand the order; it was like a church, everybody worked in silence. When the director of such an office commented on how it worked, he said pleased, that it functioned like an orchestra; everyone was doing his job coordinated with what the others were doing. Perfection was stressed in this working environment; emphasis was put on finishing the job properly and promptly, leaving no loose ends. Things should not be done in a haphazard way. Importance was given not to aesthetics as such, but on the aesthetically clean. Premises, dress, had to be clean but not flamboyant; written documents well classified and ordered, but not to the extent of becoming ornate. Employees in such firms still remember instructions by their employers, who insisted that accounting books should be well-written, depicting timely and clearly an economic condition. Too much beautification was disapproved as superfluous ("we don't do calligraphy here", they were instructed). Such employees proudly comment on how they had to learn such skills, this concept of "perfection", which helped them with their everyday life and increased their self-assurance in work. A novice entering such an office environment had to adapt to it. Those who could not fit into such an organization scheme were ousted.

## TWO PARAMETERS OF APPRENTICESHIP

Within this office atmosphere two parameters were constantly being stressed:

- a/ attention should be given so that any instituted routine/procedure should be kept unchanged. Unless someone higher in the hierarchy decides otherwise, the routine should continue to be conducted as instituted,
- b/ the ability of an employee to implement and find solutions good for the firm.

In recorded anecdotes informers remembered from work, these two issues recur as the core of an educational formation process. The Greek character is sometimes mentioned, in everyday discourse, as being inherently opposed to behaviours that derive from this first parameter. It is believed that Greeks do not easily adhere to set routines and want often to change them soon after these have been instituted. They would do things as they feel are fit and not as instructed to do them, work in the way they think is best, and often neglect or change the procedures or tasks they have to perform. Their argument would be that, so long as the job is eventually done, what is the worry? They would not easily understand that by obeying set routines they dovetail with the work others are doing.

The employee may eventually get the job done, but one has to ask: in doing so did he shift it so as to fit his personal interests and not the interests of the whole organization? That corruption or malfunctioning enters from the back door, if employees are permitted

to operate thus, uncontrolled, was a standard thought in the directors' mind in such traditional firms.

An apprentice had thus to learn to follow routines. In following them, the product of his work had to be 'perfect', perfect in the sense previously analyzed. How did directors instruct their staff on this issue? Established routines were being checked regularly, but at unspecified moments to verify that they were truly kept. The director did not ask for the sales figures, he asked for the books to be brought to him, and from these he wanted to be shown how the sales numbers derive. Sudden visits/inspections in areas where others worked so as to observe how things were being conducted *in situ*, was another method. In fact the architecture of such offices did not segregate the director from the rest of the working force. The discipline of actually following the established routines was closely but not obstinately observed; the director should know how much to insist without being lost in petty details. The role of the director was also to make sure that the correct routines were instituted, that routines were not obsolete, that changes were implemented so as to meet new needs and shifts in the market, and also to check that such implemented routines prevented any corruption of the system and stopped anyone from promoting his own personal ends and interests, while neglecting the common good of the office. The director did not see himself as a dictator, but rather as a diplomat trying to get the job done. A very successful Greek businessman -whose organization could easily serve as a model for the kind of business environment under discussion- once commented that he did not care whether he was being cheated by his staff, but up to 5% only. What he meant, was that sometimes in instances where control was not feasible, he



would pretend not to notice marginal irregularities, which would nevertheless always count on his assessment of an employee's performance. That is, it was believed that sometimes, trying to enforce an optimum organization scheme could lead to loss of time, inelastic results and thus not be worthwhile. The director should thus be trying to mould an organization which is elastic and does not crush under the burden of its own rules. His maneuvering in such circumstances would have to be an example, performed in front of his employees, of how one can deal smoothly with a situation. Employees were not expected to be trained by his eventual laxity towards them, but by the finesse of his performance that they observed.

This leads us to the second parameter, where, as already mentioned, the employee, while continuing to observe routines, had in addition to implement tasks, coming up with improvisations and solutions. How was apprenticeship in that area conducted?

When given a task -small at the beginning, more serious with time- the employee/apprentice had to report back with his/her results. (It could be of interest to refer at this point to the management system implemented by BLANCARD and JOHNSON (1982) in the *One Minute Manager*). He/she had to grasp what needed to be done, and do it promptly, in accordance to instructions. Instructions could resemble procedures, but could also not cover all details, or the situation the employee met could necessitate adjustments of given instructions. Engaging in such tasks, an employee had to be successful along the prescribed lines, or propose an amendment/solution that he/she thought will work. If he/she was experienced and circumstances prevented reporting an amendment before implementing it, she/he would proceed with the

implementation and be judged by the director in retrospect. The results of an employee's actions should bear perfection -as commented above- and also be in full accordance with the firm's aims and policies. Not even an indirect violation of the firm's working framework or aims should take place. The employee acting on behalf of his firm had to report in full to his director, also on unexpected events. In an age when telecommunications were not easy and an employer did not have direct access to all aspects of his business, this was a serious necessity. Hence, the gradual judging of employees' comportment by their employers should eventually tend towards the creation of trust. Such trust was established when one was successful according to the firm's prerequisites over a period of time. This would entail working according to the office's routines, and when gradually allocated tasks, bring them to completion in the best possible way for the firm.

## TRUST AND SITUATED LEARNING

The theoretical framework<sup>6</sup> which states that in a community of practice, knowledge is acquired through situated learning -i.e. that movement from the periphery towards the core of an organization, as one is gradually incorporated into it, is also a process of learning<sup>7</sup> -<sup>8</sup>

---

<sup>6</sup> LAVE, Jane; WENGER, Etienne (1991). *Communities of Practice: Learning, Meaning and Identity*. New York: Cambridge University Press.

<sup>7</sup> KARALIS, Thanassis (2010). Situated and transformative learning: exploring the potential of critical reflection to enhance organizational knowledge. *Development and Learning in Organizations*, n. 1, vol. 24, pp.17-20.

<sup>8</sup> WENGER, Etienne (1990). *Toward a theory of cultural transparency: elements of a social discourse of the visible and the invisible*. Thesis (Doctorate of Philosophy) Department of Information and Computer Science. Irvine: University of California.

is of interest. It could serve for a theoretical understanding of the workings of the apprenticeship system we are presently investigating.

Trust, in the way we described it, was what pushed you towards the Lave & Wegner full participation, and the core of a community of practice. It was the trust that you would act to the best of your abilities, and that you would put the good of the company first, and not your personal interest. Trust was important, because it was not always easy for a director to judge correctly a situation, as presented to him (given also the great ability of Greeks to rationalize, even lie). But it was believed that, over a period of time, any false presentation of a situation will be unearthed and then any prospects of trust would disappear, with important consequences for the employee. Sometimes some such old directors would intentionally set an employee up, or pretend to go along with his/her version of events so as to expose him/her at a later stage.

A director thus had to maneuver between knowing what was happening in each case and trust, being careful not to slip into favoritism. To be able to move in such circumstances he should know the work very well, in detail, better than any of his employees and he should probably work more and longer hours than they did. He was a "slave" to the work, following its needs and demands and not governed by holidays, vacation periods, week-end reposes etc. Consequently he taught through his example, his comportment. His example, in that instance, was not, usually, that he was doing the job of the employee, so that the employee would imitate. The example he set, was through his dedication in the smooth running of the office business (his kudos often depended on that) and through his efforts, to promote, to the best of his ability, the office's interests. A director

working along the lines just described, instituted also the lines of apprenticeship that his employees had to walk, so as to come closer to the business' "core".

The establishment of trust, hence, is the means through which an employee/apprentice moves from the periphery towards full membership of an office organization. He/she is initially asked to perform in the periphery of the business, following established routines. Gradually she/he is given more room to show his/her initiatives, to the extent that he/she has proven to be trustworthy and can perform in accordance with the firm's rules and also to its interest.

An old employer once instructed novices in his office that they should learn the firm's functioning like an apprentice painter who observes, through the keyhole in the closed door, his master painting, and learns the master's skills even though the master is unwilling or indifferent to explain them to him. This does mean, I believe, that he/she has to be extremely observant, willing to learn, grasp every opportunity to be taught, and also while doing one job have his/her eyes open to everything else that is happening in the office environment. Furthermore, I believe, it indicated that the door of learning will be closed to him/her, until he/she will be deemed trustworthy, through the above-mentioned way: his ability to perform correctly the petty tasks and routines allocated to him/her; and when entrusted with more intricate tasks involving more entrepreneurship/improvisations from his/her part, to do it with the best of his/her ability, having the firm's interests in mind. It is the establishment of trust, in such a way, which will open the door of

“learning”, in the sense that a director, under these circumstances, will be willing to share “shop” with his employees.

### THAI WISDOM AND SHUNTERING

The aim of this article has been to provide a rough ethnographic description of an office environment and apprenticeship process during the '60s and '70s in Greece. However, before concluding with an evaluation of what the article may contribute, reference shall be made to two studies which indicate the importance of ethnographic data for educational planning, and complement the viewpoint hereby presented.

In Thailand, an effort was made, a decade ago, to organize an educational system which took into consideration the cultural knowledge of the country and incorporated it into the school curriculum, in a way that could eventually be turned into business activity.<sup>9</sup> The setting up of such a program depended on local studies of village conditions, economy and norms. Through an interaction between universities, teachers and local communities, curricula were partly adapted to include local knowledge, abilities and skills, all that which was termed “Thai wisdom”, in an effort to cope with the economic crisis the country was facing. For example, in a village of woodcarvers in northern Thailand, Thongthew *got local teachers to study the community like ethnographers. They in turn developed a curriculum in which students studied the community’s curriculum by*

---

<sup>9</sup> JUNGCK, Susan; KAJORNSIN, Boonreang (2003). ‘Thai wisdom’ and GloCalization: Negotiating the Global and the Local in Thailand’s National Education Reform. In: ANDERSON-LEVITT, Kathryn. (ed.) *Local Meanings Global Schooling: Anthropology and World Culture Theory*. New York: Palgrave Macmillan.

*becoming apprentices to local artists.*<sup>10</sup> They acquired thus the knowledge that could eventually turn them into tour guides conducting tourists through their village. In a follow up, the need to integrate some concepts of global economics in the local elementary school curriculum was put forward, so as to balance *the economics concepts related to profit based capitalism and the still existing local mutual co-operative working and profit sharing concepts on which most villagers based their wood carving occupation.*<sup>11</sup> Other villages focused their school curriculum changes on basket-weaving, dairy products, rice and vegetable cultivation etc.

An ethnographic study of a Swedish railway yard<sup>12</sup>, by examining what skill and competence means in shunters' work and how their concepts differ from these of their employers, indicated how important it is to have knowledge of such nuances when talking about work organization, security regulations, training and change. Indicating that *learning a skill is also learning to recognise what counts as skill*<sup>13</sup>, the ethnographer then goes on to explain what skill means as a novice moves up the hierarchy to become an experienced shunter. A shunter's learning is not aimed at distinguishing oneself, but in achieving co-operation, in which he should be cool, composed, predicable, calm. It was thought that such knowledge should be, with

---

<sup>10</sup> Id., JUNGCK, 2003. p. 41

<sup>11</sup> WATTANATORN, Amornrat; THONGTHEW, Sumlee (2007). The development of Bann Thawai's mediated economics curriculum for sustainable wood-carving business. *Journal of Population and Social Studies*, n. 1, vol. 6, p. 115.

<sup>12</sup> EDELMAN, Brigitta (1993). Acting cool and being safe: the definition of skill in a Swedish railway yard. In: PALSSON, Gisli. (ed.) *Beyond Boundaries: Understanding, Translation and Anthropological Discourse*. Oxford: Berg.

<sup>13</sup> Id., EDELMAN, 1993. p. 142

experience, engraved in one's spinal marrow; though changing patterns of work do alter concepts of what "skilled" means.

On a similar footing perhaps, researched instances of the apprenticeship conditions in Greece's recent past could be of help in the eventual shaping of a VET program in that country. Knowledge derived could either be reincorporated in a creative shaping of an educational program, or used to clarify what constitutes ability/skill, how it is being taught, and what is its value in the social milieu. Furthermore, the fruits of such a research could perhaps be of aid, as an example, in similar attempts to incorporate cultural elements in a VET program, or indeed in any educational attempt in another country.

## **DISCUSSION**

The examination of a traditional office has indicated several issues that perhaps, taken out of the historical perspective in which we have presented them, could -together with other educational processes- possibly be incorporated into a modern educational system. Or, these issues could be regarded as problem areas on which training should focus or intervene -they were considered problem areas in the past, and probably are deemed so even today. When people in Greece today are complaining that they cannot find easily persons to do a finished job, or when the newspapers are commenting that everyone in Greece is "building his own shop" (looking after his own interests) within his working area, instead of caring for the common good, the indication is that, in Greek working relations, the values that the apprenticeship system we have outlined

strives to create, are sought but are not to be found. There is a word in Greek, *loufa*, that means evading the work allocated to one in a skilful way; the ethnographic instance we have presented shows traditional ways for dealing with such attitudes. When everyday discourse in Greece claims that Greeks have a tendency to dispute or change any instituted rule, the study of a traditional office has shown a tested way to cope with this trend.

If, like the study of shuntering in Sweden, we focus on what issues a profession or a culture is preoccupied with, and regards as knowledge/skills, then maybe, once identified, a way can be found so that some of them -the ones deemed useful- can enter educational schedules. The ethnographic sketch in this article of a traditional office environment and the apprenticeship it entailed, provides information on how this training process operated. This knowledge, maybe, could be of some relevance when discussing Vocational Education and Training (VET) in Greece today, because it may aid in the incorporation of elements from the cultural background in an educational scheme. Today, when the acknowledgement of soft skills is winning ground in most professions and vocations, examination in an ethnographic way of what these constitute and how they are learned may be of significance. Indeed the present ethnographic presentation, could serve simply to shown, as an example, how a traditional office had dealt, in the context of its organization, with issues that could be deemed as culturally problematic in Greece. A training system was implemented, ensuring that employees entering the office will learn how to function in accordance with its environment. The presentation has unearthed several aspects of this training process. It has shown that directors teach by example,



through what they are, the way they act, who they are; that establishment of trust is an important component of working relations; that a particular kind of perfection in the work produced is demanded, which involves amidst other that instituted routines are observed, and that in any implementation the employee will prove able, and willing to have the interests of the business in mind. Such corpus of cultural knowledge may be of use for the educator when the latter is concerned with the implementation of a training program. Furthermore, in more general terms, it may serve as an example, indicating the importance of knowledge of cultural issues, so as to estimate the eventual need of them being incorporated in an educational scheme.

---

**BIBLIOGRAPHY****BOOK**

BLANCHARD, Kenneth; JOHNSON, Spencer (1982). *The One Minute Manager*. New York: William Morrow.

CATZIMICHALI, Ageliki (1953). Morfes apo tin somatiaki organosi ton Ellinon stin othomaniki aftokratoria: Oi syntexnies - ta isnafia. *L' Hellenisme Contemporain*. Athens.

EDELMAN, Brigitta (1993). Acting cool and being safe: the definition of skill in a Swedish railway yard. In: PALSSON, Gisli. (ed.) *Beyond Boundaries: Understanding, Translation and Anthropological Discourse*. Oxford: Berg.

EFTHIMIOU, Maria (2003). Oi syntxnies. I kratiki organosi texnon ke epagmaton. *Istoria tou Neou Ellinismou 1770-2003*. Athens: ellinika grammata.

JUNGCK, Susan; KAJORNSIN, Boonreang (2003). 'Thai wisdom' and GloCalization: Negotiating the Global and the Local in Thailand's National Education Reform. In: ANDERSON-LEVITT, Kathryn. (ed.) *Local Meanings Global Schooling: Anthropology and World Culture Theory*. New York: Palgrave Macmillan.

LAVE, Jane; WENGER, Etienne (1991). *Communities of Practice: Learning, Meaning and Identity*. New York: Cambridge University Press.

TONDOROV, Nikolai (1983). *The Balkan City 1400-1900*. Seattle & London: University of Washington Press.

\* \* \*

**SCIENTIFIC JOURNAL**

KARALIS, Thanassis (2010). Situated and transformative learning: exploring the potential of critical reflection to enhance organizational knowledge. *Development and Learning in Organizations*, n. 1, vol. 24, pp.17-20.

WATTANATORN, Amornrat; THONGTHEW, Sumlee (2007). The development of Bann Thawai's mediated economics curriculum for sustainable wood-carving business. *Journal of Population and Social Studies*, n. 1, vol. 6, pp. 105-116.

\* \* \*

**THESIS**

WENGER, Etienne (1990). *Toward a theory of cultural transparency: elements of a social discourse of the visible and the invisible*. Thesis (Doctorate of Philosophy) Department of Information and Computer Science. Irvine: University of California.