

# Research

## Editors Note

**U**ndergraduates at Stanford are enthusiastically commencing a lifetime quest of intellectual exploration. In this second volume of the Stanford Undergraduate Research Journal (SURJ), we continue to highlight several of the finest examples of undergraduate curiosity from a diverse set of fields. This year marks the creation of a new section, Special Features, in addition to the existing Natural Sciences & Engineering, Humanities, and Social Sciences sections. Special Features provides an outlet for the highly interdisciplinary work done on campus that spans multiple sections. Much like Stanford with the Bio-X initiative and the Interdisciplinary Program in Humanities, SURJ is evolving to best represent the modern domains of research.

Undergraduates are thus pushing the frontiers of human knowledge with the aid of capable mentoring by faculty, staff, graduate students, and even other undergraduates. SURJ strengthens these bonds in the Stanford community by providing a forum to recognize and discuss student innovation. As one of only a handful of interdisciplinary undergraduate journals across the nation, SURJ strives to demonstrate the variety of undergraduate research by publishing articles for an educated audience. SURJ, with its interdisciplinary focus, has served as a model for other research institutions seeking to start their own research journal. As a result, SURJ contributes to a greater appreciation of undergraduate input by the established research community, which at many other institutions largely excludes undergraduates or merely employs them for menial data-entry tasks. Yet Stanford must take care not to regress to such a state, which can only be avoided by wholeheartedly supporting undergraduate research: expanding summer research programs that cater to students who have never engaged in research before, increasing the funding of Undergraduate Research Programs as needed to allow students to receive multiple Major Grants, and ensuring that undergraduates are either paid or are receiving course credit for their efforts. This last point of fair compensation assures that both students and mentors approach undergraduate research with all due respect.

SURJ will continue to champion undergraduate research through the 2500 print copies distributed to the Stanford community and selected institutions around the nation, as well as through our website at <http://surj.stanford.edu>.

On behalf of this year's staff and authors, we thank you for your support, and we look forward to sharing undergraduate research endeavours in the upcoming year.

Sincerely,

Christopher Baer & Rachel M. Siegel  
Editors-in-Chief, 2002-2003

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Stanford Undergraduate Research Journal (SURJ)  
Volume II: Spring 2003.

<http://surj.stanford.edu>

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# Holy War in *The Song of Roland:* The “Mythification” of History

**Mark Dominik**

In *The Song of Roland*, the French epic written down in the last years of the 11<sup>th</sup> century, good and evil are clearly delineated and understood. On the battlefield that is the setting for much of the poem, super-mortal forces fight for control of the Earth, utilizing the bodies of the warring Christians and pagans as pawns in a game of cosmological significance. While there is truth at the base of *The Song of Roland*, much of the history behind the work was “edited” in the three centuries that transpired between the battle of Roncevaux and the recording of the poem. It is true, as the poem claims, that in 778 the rear guard of Charlemagne’s army was massacred at Roncevaux. But in reality—and in contrast to the claims of the song—the Basques, and not the Muslims, destroyed the rear guard of the Frankish forces (Kalchoff, 46). In actuality, the campaign the Franks were waging in Spain was not a holy war: the

year before the massacre, Sulayman ibn al-‘Arabi came to Charles in revolt against the Emir, ‘Abd ar-Rahman. They asked the chief of the Franks for aid. Charles granted it to them, and he prepared a great army to traverse the Pyrenees, to place Sulayman on the throne, and to receive Iberia as a fief (Lafont, 123-128). The re-writing of history we see in *The Song of Roland* is that which Paul Aebischer calls the “mythification” of events:

[D]ans la souci de la censure impériale de cacher le désastre des Pyrénées, d’en minimiser les conséquences, de conserver au roi sa réputation de chef invincible... nous ne sommes pas plus dans l’histoire, mais dans la légende, dans une atmosphère mythique. (Aebischer, 3)

In the attempt of imperial censure to conceal the disaster of the Pyrenees, to

*In 778, Charlemagne and his army invaded Spain in an attempt to depose the Emir and replace him with a Muslim who would serve as a vassal to the Frankish king. Although the campaign achieved some measure of success, as the Frankish troops were returning to France over the Pyrenees, their rear-guard was attacked and massacred by an army of Basques. When Charles and the main body of the army returned, they found their companions dead, and found no sign of whither the Basques had fled. This campaign, over time, became firmly entrenched in the mentality of the French people. Around 1095, the year in which the First Crusade was launched, we find the first extant version of the great French epic, *The Song of Roland*, in which the campaign is re-written. No longer is it a political maneuver, but it has become a holy war, waged against the Muslims of Spain, with Charlemagne returning victorious at the call of his rear guard to vanquish his foes. This paper was originally titled “Guerre sainte dans La Chanson de Roland: La ‘mythification’ de l’histoire.” It was translated by Mark Dominik for this publication.*

minimize the consequences, to preserve the reputation of the king as invincible head of state... we are no longer in the realm of history, but in that of legend, in a mythic atmosphere.

In a world of myth, symbols occupy a special place, one more important than that of concrete fact. *The Song of Roland*, as national epic, gives religious significance to secular acts, appropriating the campaign of 778 not only as holy war but as war between God and Satan. Anne Lombard-Jourdan notes that there is a long tradition of appropriation and transformation of pagan symbols by the Christian monarchs of France, for “les rois étaient désireux de conserver les anciens emblèmes qui assurent aux yeux de tous leur légitimité. [The kings were desirous to conserve the ancient emblems that assured in the eyes of all their legitimacy]” (Lombard-Jourdan, 13). The case with

the battle of Roncevaux is the same: after the result of the battle slipped out of living memory, the campaign of 778 was rewritten as a battle between good and evil in order to give to the French kings—the heirs to the legacy of Charlemagne—a moral imperative to justify their rule and to give the church a brilliant past history to inspire its soldiers as they marched eastward on the First Crusade.

## Narrative Perspective

The authors of the Frankish epic shaped the reaction of their audience by diverging from the traditional narrative structure found in *The Iliad* and *The Aeneid*; the two classical epics valorize both warring factions, heightening the station of the victor, whereas the perspective of the medieval poem is entirely Christian: “Its story is narrated from a valorial position which is that of the Christians as against the Saracens. The latter are to be converted or to be killed: there is no empathy for alterity in this text” (Haidu, 37). More anti-Christian than Muslim, the pagans in the poem “do not bear any ‘real’ relationship to their presumed referents: they do not ‘refer’ to the concrete, historical societies that occupied either Spain or the Near East” (Haidu, 36). According to the theories of Edward Said, the authors of *The Song of Roland* projected Christianity onto the pagans in a trope common to occidental literature in order to create a new society—a society marked specifically as anti-Christian. This anti-Christian society, according to Norman Daniel, is constructed to convince, or perhaps to amuse, Christians, but has little resemblance to actual Arabs or the actual Arab world. This is a case of what Said calls the “theater of the Orient,” in which caricatures of Orientals take the place of actual men:

The idea of representation is a theatrical one: the Orient is the stage on which the whole East is confined. On this stage will appear figures whose role it is to represent the larger whole from which they emanate. The Orient then seems to be, not an unlimited extension beyond the familiar European world, but rather a closed field, a theatrical stage affixed to Europe. (Daniel, 259-260 in Said, 63-65)

In *Roland*, the Orient is defined as

anti-Occident. If Occidentals have positive value—and they do—Orientals have none. Thus in the Frankish epic, the pagans are never unconditionally praised as we see in Greek and Latin epics such as the *Iliad*:

There the Trojans and their companions were marshaled in order. Tall Hektor of the shining helm was leader of the Trojans, Priam’s son; and with him far the best and the bravest Fighting men were armed and eager to fight with the spear’s edge. (Lattimore, ll. 815-818)

In the poems of Homer, admitting the valor of the Trojans amplifies the Greek victory. But this is not the case in the French epic, in which valor in the pagan camp is noted only with a lamentation that the worthy pagan is not Christian:

Sa vasselage est suvent esprovet. Deus! quel baron, s’ouïst chrestientet!

His vassalage was certainly proven. God! what a baron, were he but Christian! (v. 3163-3165)

When pagans are valorous, it is noted as a strictly individual characteristic. The enemies in *Roland* are collectively rewritten as “feluns” and “criminels,” giving the Frankish army a moral imperative to conquer.

However, the fact that the symbolic system of the pagans in the poem is simply the inverse of the Christian system complicates the issue and raises new questions. Peter Haidu sustains that during the Middle Ages “strictly human alterity could only be recognized as a negatively marked version of the self” (Haidu, 37). If we accept the theory of Haidu—that the Other is the negative version of oneself—we find that the pagans of *Roland* have more sins to account for: they are heretics. From the narrative viewpoint in the song, the pagans believe in a caricature of the true faith. They have a trinity of gods, named Apollin, Tervagant and Mahomet, whom the pagans beg to intercede for them in battle, much as the Christians do with respect to their God. The pagans’ belief in three gods—not one God in three persons—is closely allied with the beliefs of a number of heretical movements of 11<sup>th</sup> century France, which denied the existence of a

Trinity (Wakefield & Evans, 21). One manifestation of this heresy, Catharism, subscribed to the belief that:

[L]e Père, le Fils, le Saint-Esprit ne sont point, pour eux, un Dieu en trois personnes. Le Père est plus grand que le Fils et que le Saint Esprit. (Nelli, 286)

The Father, the Son, the Holy Spirit are not, themselves, one God in three persons. The Father is greater than the Son and than the Holy Spirit.

The pagans also transform the Christian practice of veneration of idols into worship—another manifestation of their lack of comprehension of the true faith. As those who worship idols, they look towards and move towards nothingness. According to Saint Paul: “nous savons que l’idole n’est rien—ou est le Rien—en ce monde [we know that the idol is nothing—moreover the Nothingness—in this world]” (I Corinthians 8:4), and Saint Augustine states that before he found religion, he tended towards nothingness like an idol (Soliloquies, 167). But the greatest sin in the pagan camp is the rejection of Christ. Since they have rejected the mercy brought by the voluntary death of the son of God, they are still marked by the stain of Original Sin:

Difatti noi abbiamo offeso (Dio) nel primo Adamo, non osservando il suo precetto; però siamo stati riconciliati nel secondo Adamo, diventati obbedienti fino al morte. (Testa, 5)

In fact we offended God with the first Adam, not observing his precept; but we have been reconciled by the second Adam, following obediently to the death.

All are culpable for the sin of Adam, save the Christians who accepted the saving grace of Christ. Culpability for this sin, among the others, rests with the pagans until they accept the true faith.

## Symbolic Systems

By not ascribing to the Christian faith, the pagans become evil in the theological system of the Middle Ages. Evil, according to Augustine, comes from the improper usage of the free will God gave to mankind. Boethius expanded upon Augustine’s thesis,

reaching the conclusion that good emanates from God into all things. Normally, beings tend towards the good because it is nature for a being to desire the good. It is, however, possible for a being to be deceived into wishing for evil—that is, to act against God’s will (Nash-Marsh, 210-218). In Boethius’s schema, evil can come from lack of knowledge, from fortune, and from lack of divine order (Boethius, 67-68). In *The Song of Roland*, one finds proof of the lack of knowledge on the part of the pagans: “Ço est une gent ki unches ben ne volt. AOI [This is a sort of which has never seen goodness. AOI]” (v. 3231). According to the philosophical system of Boethius, to tend towards evil (or away from good) is to tend towards a state of non-being:

Hoc igitur modo, quicquid a bono deficit, esse desistit. Quo fit, ut mali desinant esse, quod fuerant – sed fuisse homines adhuc ipsa humani corporis reliqua species ostentat—quare versi in malitiam humanam quoque amiserunt naturam. Sed cum ultra homines quemque provehere sola probitas possit, necesse est, ut, quos ab humana conditione deiecit, infra hominis meritum detrudat improbitas; evenit igitur, ut, quem transformatum vitiis videas, hominem aestimare non possis (IV, 3, 48-54; Boethius, 86-87).

Thus, whoever turns away from the good ceases to exist. That is, he who tends towards evil—he who was a man becomes an empty shell of a man—because to move toward evil is to forsake nature. But when other men, whoever they may be, continue on like this, it is necessary that those who deviate from human nature be thrown out of the ranks of meritorious men; this transformation being so, we cannot esteem them to be men.

According to Boethius, a “creature would neither be nor be good if God did not cause it” (McInerny, 243). God, then, is the arbiter of good and evil; those who are with him are good, and those who are against him are evil.

If God is he from whom all good things come—the absolute good—then Satan is the opposite. The pagans, who have chosen the path towards evil, tend towards Satan, breaking the unity of the cosmological order that God established (Girard, 65). To restore unity and

prepare the way for God’s kingdom, one of two things must transpire: either the pagans must accept God, or the Christians must kill them. The pagans, *prope suo iure*, ought to be killed and cast into hell. It is thus common to associate, in the song, the death of a pagan with the action of a demon. There are at least three deaths where one finds a demon carrying away the soul of one of the damned (v. 1267-1268, 1551-1553, 3644-3647). In fact, the last words Angelier, the Gascon of Bordeaux, utters to the dying pagan Escremis de Valterne explains the condition of the pagans *post-mortem*: “Turnet estes a perdre! [You have chosen damnation]” (v. 1295-1296).

The Christians, in contrast to their adversaries, fight for God and for good. In the battle between the pagans and the Christians, “Païen unt tort e chrestiens unt dreit [the pagans are in the wrong and the Christians in the right.]” (v. 1015). The Christians fight a holy war, and vengeance against a criminal people is part of their motivation:

La flur de France as perdue, ço set Deus. Venger te poez de la gent criminel (v. 2455-2456).

The flower of France is lost, thus God knows. Wreck vengeance against the criminal race.

In the eyes of the French, the pagans are criminals. They rejected Christ, from whom all good things come, and they occupied a part of Europe that was Christian at one time. The frontier between France and Muslim Spain was fraught with tension: it was the space between those who fought for God and those who fought for Satan. The battle memorialized in *The Song of Roland* can be read as a new contest between God and Lucifer. In this space men are pawns in the game of absolute forces, as men are pawns in the hands of their divinities in the poems of Homer. From the mouths of the soldiers themselves one can hear the words that hand over their fates to their gods: the Christians “Recleimet Deu e l’apostle de Rome [Call upon God and the apostle of Rome]” (v. 2998) and the pagans

Dedavant sei fait porter sun dragon  
E l’estandart Tervagan e Mahum  
E un ymage Apolin le felun (v. 3266-

3268).

Before them carried their dragon  
And the standard of Tervagan and  
Mohammed  
And an image of Apollo, the felon.

The *oriflamme* that the Christians carry into battle in place of the pagans’ idols, the sign of holy war, functions as a symbol of the power of the Christian God. And the Christians utilize many other emblems to bring them good fortune: “Seignat sun chef de la vertut poisant [signing their heads with the powerful virtue]” (v. 3111) and “Sis beneit Carles de sa main destre [Charles blessed them with his right hand]” (v. 3066). These signs of Christ’s presence are used as talismans against evil.

In a system constructed of symbols, it is necessary to destroy the other’s signs in order to achieve victory. By destroying the pagan idols, Charlemagne destroys the pagans themselves:

E Tervagan tolent sun escarbuncle,  
E Mahumet enz en un fosset butent,  
E porc e chen le mordent e defulent (v. 2589-2591).

And they threw down Tervagan  
And threw Mohammed in a ditch  
And pigs and dogs bit at them and defecated on them (v. 2589-2591).

The capacity to choose that which will happen to the gods of another is to establish power over the other. In holy war, if one loses one’s gods, one has lost the war.

## Christological Symbolism

Both Roland and Charlemagne function as Christ figures in the text. During the first half of the poem, Roland is a sacrificial Christ, who dies freely. The treason of Ganelon, a Judas figure, finds its resolution in the voluntary act of Roland:

Ce dénominateur c’est la violence intestine; ce sont les dissensions, les rivalités, les jalousies, les querelles entre proches que la sacrifice prétend d’abord éliminer, c’est l’harmonie de la communauté qu’il restaure, c’est l’unité sociale qu’il renforce. (Girard, 22)  
This is inherent violence; there are dis-

sentions, rivalries, jealousies, and quarrels between friends and relatives that the sacrifice seeks to eliminate, it is the harmony of the community that it restores, and it is social unity which it reinforces.

By Ganelon's treason, Roland is killed and the *dénouement* of the work begins. Roland does not call for the help of Charlemagne until he knows that he will die—sacrificing voluntarily his life for the Christian cause. It is appropriate that a cleric—Turpin the archbishop—signals when the time to sound the oliphant is come:

“Sire Rollant, e vos, sire Oliver,  
Pur Deu vos pri, ne vos cuntrialiez!  
Ja li corners ne nos avreit mester,  
Mais nepurquant si est il asez melz:  
Venget li reis, si nus purrat venger;  
Ja cil d’Espaigne ne ‘en deivent turner  
liez.  
Nostre Franceis i descendrunt a pied,  
Truverunt nos e morz e detrenchez,  
Leverunt nos en bieres sur sumers,  
Si nus plurrunt de doel e de pitet,  
Enfuerunt [nos] en aitres de musters;  
N’en magerunt ne lu ne proc ne chen.”  
Respunt Rollant: “Sire, mult dites  
bien.” AOI (v. 1740-1752)

“Sire, Roland, and you, sire Oliver,  
For God I pray, do not speak against  
each other!  
Already we are on the verge of defeat,  
But nevertheless it is much better:  
The king will avenge us, if he can;  
Already the king of Spain is lost.  
Our companions will return,  
Finding us dead and disordered  
They will carry us off on biers of honor,  
And cry for us with sadness and pity,  
They shall bury us properly;  
We shan't be eaten by wolf or pig or  
dog.”  
Roland responded: “Sire, you speak  
well.” AOI

It is the act of a cleric that makes the choice to call for aid by sounding Roland's horn. Lombard-Jourdan suggests that the oliphant calls not only human aid, but also celestial aid, amplifying the cosmological status of the hero of the work (Lombard-Jourdan, 225). When Roland's death nears, the religious symbolism becomes stronger. Most of the Franks need a priest to confess their sins, but Roland confesses

directly to God:

“Veire Patene, ki unkes ne mentis,  
Seint Lazaron de mort resurrexis,  
E Daniel des leons guaresis,  
Guaris de mei l’anme de tuz perilz  
Pur les pecchez que en ma vie fis!” (v.  
2384-2388).

“True father, which is no lie,  
You raised Saint Lazarus from the dead,  
And protected Daniel from the lions,  
Protect my soul from all dangers  
From the sins that in my life I have  
committed!”

Reading these lines, one recalls the prayers of Christ in the garden before his treason. God, of course, accepts the confession of Roland, as he heard the prayers of his son, and he sends his angels to save the soul of he who symbolizes Christ:

Deus tramist sun angle Cherubin,  
E seint Michel del Peril;  
Ensembl’ od els sent Gabriel i vint.  
L’anme del cunte portent en pareis  
(2393-2396).

God sent forth his Cherubims,  
And Saint Michael, guardian in danger;  
With the others Gabriel went.  
They carried Roland's soul into  
Paradise.

Here the story of Roland comes so close to that of Christ that it seems that Roland's very destiny is to be killed as a holy martyr, and to be received in heaven as a man, almost divine.

When Charlemagne arrives on the battlefield, he searches for the bodies of the 12 companions, and that of Roland in particular: “U estes vos, bels nies? [where are you, good nephew?]” (v. 2402), he asks. In Latin Christianity, the body holds great importance. The cult of the saints, originally growing out of the veneration of martyrs in the catacombs, was institutionalized because the cult gives power to he who wields it (Brown). By recovering the bodies, Charlemagne creates a new cult of saints, carrying his relics back to France:

Vint à Burdeles, la citat de [valor].  
Desur l’alter seint Severin le baron  
Met l’oliphant plein d’or e de manguns:  
Li pelerin le veient ki la vunt.

Passet Girunde a mult granz nefz qu’i  
sunt;  
Entresque a Blaive ad cunduit sun  
nevold  
E Oliver, sun nobilie cumpaignun,  
E l’arcevesque, ki fut sages e proz (v.  
3684-3691).

He came to Bordeaux, that great city.  
Above the alter to Saint Severin  
He put the oliphant, full of gold and  
gems:  
The pilgrims who come there can see it.  
He passed Girunde and the great ships  
there  
And he came to Blaive whither he carried  
his nephew  
And Oliver, his noble companion,  
And the archbishop, who was both wise  
and brave.

With this material history, the cult of Charlemagne is infused with value. These relics enhance the dynasty of Charlemagne, and his descendants were to use the cult to amplify their power and prestige—as we see in the very song that is handed down to us today.

Roland, however, does not die with the death of his body. Charlemagne supplants Roland, becoming the figure of Christ the avenger, Christ of the last judgement. He arrives on the scene to cast the pagans into hell. Charlemagne brings with him justice, swift and true, like that of Christ in *Revelation*. The idols and false gods of the pagans cannot save them from the judgement of the Christian deity:

E cil respunt: ‘Morz estes, Baligant !  
Ja vostre deu ne vos erent guarant’ (v.  
3513-3514).

And he responded, “You are dead,  
Baligant !  
Your gods cannot protect you.”

Charlemagne, as an avenging Christ,  
executes the justice of God:

Carles ad dreit vers la gent [pa]iesnie;  
Deus nus ad mis al plus verai juise (v.  
3367-3368).

Charles was in the right against the  
pagans  
God never administered more true justice.

## Rewriting History

In reality, the battle at Roncevaux was one fought between an alliance of Christians and Muslims, and another group of Christians. The life of human memory, however, is short. In the Middle Ages, 60 years—the span of memory of a village's most elder citizen—was frequently conceded as the definition of the collective memory of a people. Until 829, the annals of the history of the Frankish people admitted the defeat of the army at Roncevaux. But the annal of Egihard, written in that year, is the last which treats the campaign with the exactitude of history:

Aduvabat in hoc facto Wascones et levitas armorum et loci, in quo res gerebatur, situs, econtra Francos et armorum gravitas et loci iniquitas per omnia Wasconibus reddit impares. In quo proelio Eggihardus regiae mensae praepositus, Anselmus comes palatii et Hruolandus Britannici limitis praefectus cum aliis conpluribus interficiuntur. Neque hoc factum ad praesens vindicare poterat, quia hostis re perpetrata ita dispersus est, ut ne fama quidem remaneret, ubinam gentium quaeri potuisset. (Einhard, 53)

It helped the Basques that they came to this place where the battle was being fought, lightly armed, whereas the French were heavily armed and in a disadvantageous place and they were unequal to the Basques in every respect. In this battle—according to Egihard, chronicler of the king—Anselm, the count of Palatine and Roland the Breton, prefect of that land, were killed with many others. Nor could this deed be avenged by the Frenchmen present, because the enemy had scattered, so that no rumor remained to be learned of where they had gone.

According to Lafont, 51 years after the battle, the clerics began to re-write the history of the campaign (Lafont, 125-126). Roland, a character of whom the existence is uncertain, and whose actions strike us as unusual, is present in the annal of Egihard. But history had

not yet become myth. Three centuries later, when the first versions of *The Song of Roland* were being recorded, one finds that the fight at Roncevaux had been completely rewritten as a sacred battle. The Roland of the end of the 11<sup>th</sup> century is infused with a very contemporary sentiment. At that moment, Charlemagne was interpreted as the prototype of the crusader, and Roland as a Christian hero:

Charlemagne devient le type du roi chrétien par excellence, combattant 'pur eschalcier sainte crestienté'. Roland, un héros de la foi mourant pour son Dieu et pour son roi, un modèle des vertus chevresques selon l'Église: chevalier, croisé, martyr.... C'est entre ces deux dates, entre 800 et 1100, mais plus particulièrement au XI<sup>ème</sup> siècle, que se situe la formation de l'idée de guerre sainte qui aboutit à la croisade et rejoint le *jihad*. (Flori, 31-34)

Charlemagne became the Christian king par excellence, waging war for the holy church. Roland, a hero of the faith who died for his God and his king, became a model of chivalric virtues according to the Church: knight, crusader, martyr.... It is between 800 and 1100, but moreover in the 11<sup>th</sup> century, that we situate the idea of holy war that departs from that of crusade and arrives at *jihad*.

At the time of the first crusade, the fear of the other that is evinced throughout *The Song of Roland* was omnipresent. The memory of the Viking and Saracen invasions still menaced the minds of the French (Duby, 52). The 11<sup>th</sup> century belief that the end of time was approaching amplified this fear of alterity. The Church moved more and more to ban the killing of other Christians, in an effort to prepare for God's peace. Christians, during the last half of the 11<sup>th</sup> century, became more and more amenable to the idea of killing pagans (Duby, 212). In 1095—at the same moment that *The Song of Roland* was being recorded—Pope Urban II called on the crowd of Frenchmen on the field at Clermont to go to the holy land as warriors of Christ, and to purge the

Levant of the pagans who infested it in order to prepare for the coming kingdom of God, for the kingdom would not be established until all subscribed to the true faith (Duby, 63). To further inspire religious fervor, clerics found parallels and justifications in Scripture for a holy war:

La Terrasanta come Terra Promessa (Esodo, 3, 8) e la certezza che Dio combatte col Popolo Eletto contro i suoi nemici (Salmi, 67, 22) in Roberto, il compimento delle profezie con l'entrata delle Nazioni nel Tempio (Salmi, 78, 1-4) e la funzione mosaica del pontefice che prega con le mani alzate mentre il Popolo Eletto combatte come gli ebrei contro gli Amaleciti (Esodo, 17, 11) in Baudri. (Cardini, 36)

The holy land as promised land (Exodus, 3, 8), and the certainty that God will combat with the chosen people against their enemies (Psalms, 67, 22), the fulfillment of the prophesy of the entry into the nations of time (Psalms, 78, 1-4) and the Mosaic function of the pope who prays with upraised arms while the chosen people wage war as did the Hebrews (Exodus, 17, 11).

The assumption of the war against Spain into the Christian system gave the kings of France a heritage with a moral power and gave the crusades a tradition of victory and an epic poem to inspire the armies. It is certain that *The Song of Roland* was not born in 1095—Roland was a celebrated individual before the first crusade. But the song was written down at this moment because the clerks and the king were searching for a fitting form of propaganda. The history of the campaign in Spain—rewritten across the centuries—furnished them propaganda of the best sort: that which gives divine righteousness to its possessors. Carrying the oriflamme another time as symbol of just war, (Lombard-Jourdan, 229) the French army marched from *la douce France* to the Holy Land to prepare the world for the reign of God.



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# German National Identity: Patriotism and Stigma

*Hilary Burbank*

## Introduction

The intertwined issues of German national identity and patriotism are not just matter for idle contemplation: divergent approaches to these controversial topics have shaped aspects of Germans' lives ranging from the government's official immigration policies to the everyday experiences of Germans abroad, from Germany's position in the international community to German schoolchildren's history lessons. The present study explores the singular topography of German national identity and patriotism with an appreciation of the specific situations or stigmas that Germans may encounter and is an attempt to interpret some of these findings in a more global framework. For historical reasons, Germany offers an unusual, even unique, arena in which to study the difficulties people may experience with these issues, but Germans are not—or at least should not be—the only ones confronting their national identity, and especially patriotism, at both individual and societal levels.

This investigation examines patriotism, national identity, cultural affiliation, ingroup preferences, and ethno-

centrism reported by older and younger Germans from various regions in the former East and West Germany. More specifically, the study aims to document and possibly account for any relationships between these variables, to weigh in on the contested distinction between nationalism and patriotism, and to ascertain whether the predictions of social identity theory (SIT; Tajfel, 1974; Tajfel & Turner, 1979) seem to be supported. According to SIT, people maintain positive, self-enhancing identities as members of an ingroup by comparing themselves favorably to an outgroup. The "ingroup" refers to a group of people perceived to share one's category membership (e.g. female) or social identity (e.g. Stanford student). Tajfel (1978) frames SIT as a conflict theory: social groups compete for symbolic and material resources, striving to preserve the "evaluative superiority of the ingroup at all costs" (Hogg & Abrams, 76). SIT requires four conditions (Tajfel, 1974), which national identity satisfies. First, classification of the social world occurs based on various attributes (e.g. nationality), which often contain an implicit value dimension (good-bad). Second, individuals ascer-

*This study investigated Germans' self-reported levels of patriotism, national identity, cultural affiliation, ingroup preferences, and ethnocentrism in order to explore the predictions of social identity theory (SIT) with reference to members of a stigmatized national group. Participants were 795 Germans born either before 1946 or after 1976 and currently residing in six federal states of the former East and West Germany. The data reveal moderate regional and strong generational variation: older people and former East Germans reported overall higher levels of patriotism, national identity, cultural affiliation, ingroup preferences, and ethnocentrism, relative to younger Germans and to former West Germans. The results also challenge SIT by demonstrating that Germans can positively identify with their nation and culture without inevitably exhibiting national chauvinism.*

tain the categories that correspond to their own attributes (e.g. speaking German) and assign themselves to those groups. Third, social comparisons arise between the ingroup and the outgroup (e.g. Germans and French). Fourth, group members affirm their own identities through these negative outgroup comparisons. In this markedly relational theory, the individual's reference group is not the self but the outgroup, leading some to contend that "there is

Demographics	N	%
Dresden (East)	88	11.1
Rostock (East)	37	4.7
Berlin (East/West)	69	8.7
Landskron (West)	40	5.0
Hannover (West)	438	55.1
Cologne (West)	123	15.5
Born before 1946	134	16.9
Born after 1976	661	83.1
Male	334	42.0
Female	450	56.6
German citizen	726	91.3
Non-German citizen	56	7.0
Protestant	207	26.0
Catholic	94	11.8
Muslim	29	3.6
<b>TOTAL</b>	<b>795</b>	<b>100.0</b>

**Table 1. Demographic make-up**



no ‘we,’ no collective identity, without demarcation from ‘others,’” and that “attitudes towards others should be seen as a component of the national identity itself” (Blank, Schmidt, & Westle, 2001, 10).

This question—is it possible to be “pro-us” without being “anti-them?”—corresponds to a distinction drawn between patriotism and nationalism. This conception posits a continuum of national identification, ranging from national consciousness (or awareness of national membership) to jingoistic nationalism, with patriotism somewhere in the middle (Blank et al., 2001). In simplified terms, both patriotism and nationalism involve positive affective ties to the nation, but only the latter entails the derogation of other nations and nationals. Moreover, empirical measures of patriotism and nationalism have proved separable or independent, and only the latter typically correlates with xenophobia (Blank et al., 2001). Such findings have led some researchers to conclude that, contrary to SIT, a positive and self-affirming patriotism exists independently from nationalism and is not linked to outgroup derogation (Blank et al., 2001; Kosterman & Feshbach, 1989; Müller-Peters, 1998).

In light of German history, this distinction between patriotism and nationalism makes German national identity intriguing and deeply problematic. Although nationalism, especially in its extreme forms, may meet with criticism in most sociopolitical contexts, many Germans perceive a strong national and international norm against any expression of German patriotism. In the wake

of two world wars and the Holocaust, a threefold stigma against German nationalism as militaristic, extremist, and ethnocentric has developed. While taboos against nationalism do not necessarily proscribe patriotism, recent controversies reveal that many Germans blur this distinction. In fact, a prominent politician’s March 2001 comment that he was “proud to be German” drew massive criticism and ignited a debate that stretched on for months and focused national attention on German patriotism (Brüning, Krumrey, Opitz, & Stock, 2001).

This study explores the psychological consequences of attempting to positively identify oneself as a German national despite these stigmas against German nationalism and patriotism. Several possible reactions to this dilemma were hypothesized. A German individual could choose to reject the negative stereotypes and espouse patriotism or even nationalism regardless; to abandon a holistic patriotism and focus instead on specific aspects of Germany that merit pride; to dissociate from a primary identification as German in favor of a local, regional, continental, or global identity; to dismiss patriotism as inherently meaningless, absurd, or even inappropriate; or to accept the negative stereotypes of Germans and experience national identity as a source of shame or guilt. These options may not be mutually exclusive, although some combinations, for instance national pride with national shame, would likely indicate deep-seated conflict or ambivalence. Challenges to SIT would arise if individuals reported positive attachments to their German identity with no outgroup derogation.

## Method

### Design

In an interregional, intergenerational study made possible by a President’s Scholar grant, 795 participants from two cohorts and six locations in Germany completed a brief

questionnaire on German national identity. The primary independent variables were demographic (birth cohort, geographic location, gender, religion, citizenship, etc.), while the four primary dependent measures were agreement with the statements: (1) Overall, I am proud to be German. (2) I am glad that I am German. (3) Sometimes I am embarrassed/ashamed to be German. (4) Sometimes I wish I were not German. Other items (assessing cultural affiliation, ethnocentrism, ingroup preferences, and so forth) were included as possible predictors or correlates of these German identity indices.

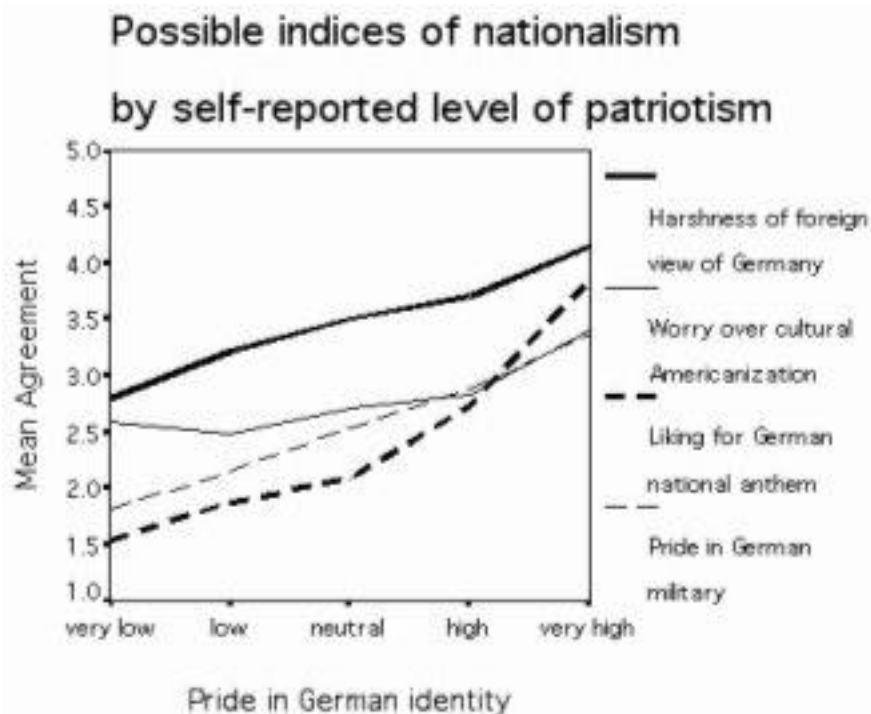
### Participants

The older cohort comprised individuals born before 1946, who had thus either lived through the war or grown up in its immediate aftermath, and were directly affected by Germany’s National Socialist past. The younger cohort included people age 18 and older born in or after 1976. These individuals were born a full generation after the war, but were old enough to have formed an opinion about patriotism and engaged with the recent public controversy. This cohort-based selection method involved comparisons between two age groups separated by multiple decades—whose average birth years were 1920 and 1982—making shifts in attitudes across generations easier to detect.

To investigate the effect of regional variation, research was conducted at six sites in widely separated regions of Germany. From the former West Germany, Landshut, Cologne, Hannover, and West Berlin were selected, while East Berlin, Rostock, and Dresden represented the former East Germany. Landshut and Rostock are both relatively small cities relative to the others. Landshut, Bavaria, is very predominantly Caucasian; by contrast, Berlin has the second-largest Turkish population of any European city. Germany’s south and west are generally more conservative and Catholic; the north and east, more liberal and

COHORT	Pride in German identity	Happiness in German identity	Shame in German identity	Desire for non-German identity
Born before 1946	4.10 (1.24)	4.05 (1.22)	2.26 (1.60)	1.71 (1.27)
Born after 1976	3.05 (1.25)	3.18 (1.15)	2.39 (1.35)	2.47 (1.30)

Table 2



Protestant or atheistic. While Landshut and Cologne enjoy great prosperity, poorer cities in the east face massive unemployment, often around 20 percent. Bavarians are renowned for their regional and political chauvinism, whereas former East Germans more often emigrate. The study incorporated political, religious, economic, and ethnic diversity at both regional and individual levels (see Table 1, with missing values unreported), so as to present a representative depiction of national identity.

### Measures

The survey instrument used was inspired by the General Ethnicity Questionnaire (GEQ), with which Tsai, Ying, and Lee (2000) showed that pride in a culture strongly predicted cultural identification for American-born Chinese. To test whether comparable relationships held for Germans, the present investigation borrowed seven GEQ items on cultural pride, cultural activities, and social affiliations.

Two public opinion polls conducted by German newspapers also added to the survey. The first explored various bases of patriotism, from the economy to the military, from history to art, from democracy to athletics (Brüning, Krümrey, Opitz, & Stock, 2001). The other poll defined specific ways in which Germans might relate to national

identity: pride, happiness, or shame in being German, or indifference to the question of patriotism (Beste, Hildebrandt, Leinemann, Mestmacher, & Rosenkranz, 2001). Contemporary press coverage of the patriotism debate also contributed, yielding a 33-item survey. Participants rated each declarative sentence on a 5-point scale from *strongly disagree* to *strongly agree*. Demographic questions elicited year and region of birth and upbringing, citizenship status and duration, gender, political activity and affiliation, as well as religious activity and affiliation.

### Procedure

Data collection took place in the summers of 2001 and 2002. For each city, faxes were sent to every high school listed on [www.schuleweb.de](http://www.schuleweb.de) with grade levels high enough to include students 18 and older, and to every retirement home listed in <http://www.wohnen-im-alter.de>. The cover letter asked permission to distribute the attached survey at the high school or retirement home, and yielded an overall response rate of approximately 25-35%, including polite refusals. If all the schools in a given city required a state-granted research permit, the study was done instead at youth centers or boarding houses listed on [www.gelbseiten.de](http://www.gelbseiten.de). All aspects of the research were conducted in German.

The data reveal moderate regional and strong generational variation in attitudes toward German identity. Older people and former East Germans reported higher levels of pride and lower levels of shame in their national identity, as well as less of a desire to disidentify as German, relative to the younger cohort and former West Germans.

### Cohort and National Identity

Strong effects for age emerged on three of the four primary dependent measures of ways in which Germans relate to their national identity. Table 2 shows the mean agreement of each cohort on a 5-point scale with the statements of pride, happiness, or shame in being German, as well as desire for a non-German identity. In each case except that of shame, t-tests revealed that the means differ significantly at the  $p < .01$  (99% confidence) level. Moreover, although minimal variance due to age was found for the 1976-1984 cohort, age influenced several factors within the 1902-1946 cohort: older people were significantly more likely to report happiness ( $p = .02$ ) and pride ( $p = .002$ ) in their German identity.

### Region and National Identity

Geographic location was found to have a secondary bearing on these four national identity indices. Regional variance between cities was non-significant among the older cohort and relatively minimal among the younger cohort. The East-West distinction did produce significant variance in dimensions of German identity, with former East Germans reporting more pride ( $M = 3.49$ ) than former West Germans ( $M = 3.15$ ), a result that was highly significant overall ( $p = .004$ ). Conversely, East Germans reported significantly ( $p = .02$ ) more shame ( $M = 2.60$ ) than West Germans ( $M = 2.30$ ).

### Patriotism and Nationalism

Beyond demographic variation in dimensions of national identity, several correlates of these four dimensions emerged. Expressing pride in German

identity correlated moderately to strongly with several other items that may be related to nationalism (see graph), including: belief that “many foreigners have an undeservedly negative view of Germany” ( $r=.37, p<.001$ ), concern “about the Americanization/Anglicization of the German language and culture” ( $r=.22, p<.001$ ), liking for the German national anthem ( $r=.56, p<.001$ ), and pride in “the achievements of the German military” ( $r=.42, p<.001$ ). A factor analysis of the data yielded similar results. Responses to the 33 survey items were factor analyzed using a varimax rotation that yielded four principal components. The top two components accounted for 31.7% of the variance and had eigenvalues of 8.0 and 2.4, respectively. Examining the factors that load on these components at an absolute level greater than .45 (see Table 3) suggests that these two components bear on the contested nationalism-patriotism distinction. The first group of factors reveals a very strong pro-German orientation expressed in terms of global German pride, encompassing political symbols like the national anthem and the German military. These individuals are highly identified with their German (rather than European) national identity, and reject both any foreign prejudices against Germany and any taboos against expressing German patriotism. Also loading on the “pride” component was the belief that pride in Germany and in German identity were not distinct, implying a direct connection between individual identity and attitude toward the nation. The second group of factors corresponds to a set of ingroup preferences: for German music, travel, movies, lifestyle, books, and so forth. These individuals thus appear most strongly connected to a German cultural identity, and somewhat less so to an overtly proud or political German identity.

## Discussion

To summarize, the main findings of this investigation were that (1) generational cohort was a strong predictor of the ways in which Germans relate to their national identity, that (2) geographic location also played a part—albeit a smaller one—in shaping people’s level of pride in that identity and

desire to renounce it in favor of another, and that (3) many of the variables surrounding aspects of patriotism versus implied nationalism proved separable.

The data suggest that younger Germans relate less positively to their national identity than older Germans. A congruent finding is that older individuals were much more likely than younger people to agree that “German culture has had a positive impact” on their lives, with means of 3.98 and 2.83, respectively ( $p<.001$ ). This is not to say that younger Germans were markedly unhappy with their identity—after all, they reported a mean happiness of 3.18, just above the scale’s midpoint—but that they were less likely to have an actively positive identification as Germans. Moreover, even within the 1902-1946 cohort, older people—who, ironically, were more likely to have vivid memories of and active involvement with the Nazi era—expressed more pride and happiness to be German. Taken together, these findings suggest a trend and possibly even a trajectory in German identity, such that with time Germans are becoming less proud or contented and more critical when they think about national identity. Potentially, these changes could be the result of the three stigmas discussed earlier, conveyed to individual Germans either through popular international attitudes or through German culture—public discourse, educational curriculum, political movements—itsself.

As for the regional variation in dimensions of national identity, former East Germans reported more pride and more shame than former West Germans, a somewhat counterintuitive result. The higher level of shame among former East Germans, however, is significant only within the younger ( $p=.02$ ) and not the older ( $p=.26$ ) cohort. This discrepancy suggests that something—like having to suddenly confront war guilt after decades of projecting Nazism, militarism, and genocide onto West

### Factor analysis: Top two components

Factors loading on "pride" component	
.73	Pride in German technology
.69	Pride in German identity
.68	Pride in German economy
.65	Desire for acceptance of German patriotism
.63	Happiness in German identity
.60	Pride in German military
.56	Pride in German culture
.52	Liking for German national anthem
.52	German influence on personal worldview
.49	Positivity of German culture's personal impact
-.48	More European identification
.48	Harshness of foreign view of Germany

Factors loading on "preference" component	
.72	Preference for German music
.71	Preference for travel in Germany
-.63	Willingness to emigrate
-.62	Preference for foreign movies
.52	Worry over Americanization of German culture
-.50	Preference for foreign lifestyle
.47	Preference for German books
.46	German influence on personal worldview

Table 3

Germany—caused young former East Germans to feel more shame in their national identity than their older counterparts or the former West Germans. The higher levels of pride reported by former East Germans could perhaps be related to their greater happiness over the German Reunification ( $M=4.33$ ) relative to former West Germans ( $M=3.64; p<.001$ ), although that effect, too, is specific to the younger cohort ( $p<.001$ ). In short, former East Germans on the whole were prouder to be German than their Western counterparts, while the Eastern youth were both more ashamed of that identity and happier about the Reunification.

The results of this study also contribute to the discussion of patriotism as either a benign ingroup identification contrasted with nationalism or a nationalistic stance in itself. While nationalism could not be assessed directly because of both social desirability and offensiveness/sensitivity concerns—how would participants have reacted to an item such as “I feel superior [or nationalistic] as a German”?—several conceptually related items were included. Blank and Schmidt (1993) have found that German patriotism and nationalism are multidimensional and vary greatly according to the specific object of pride. Blank and his colleagues (2001) contend that patriotism corresponds to feelings of pride in the national constitution, social welfare

programs, and so forth, whereas nationalism correlates to pride in areas like the military, economy, and political symbols. Notably, in this study, pride in German identity, the military, and in the economy, as well as liking of the national anthem all correlated extremely highly one another ( $p < .001$ ) and loaded on the same initial component in a factor analysis. Especially in light of twentieth-century German history, choosing to endorse the military's "accomplishments" or the national anthem, which remains "Deutschland über Alles" (albeit with the more objectionable stanzas now unsung), represents a highly controversial political move that may suggest a lack of concern with German wrong-doing or responsibility for its past. Moreover, self-reported patriotism was related to ethnocentrism and/or xenophobia: pride in German identity correlated negatively with endorsement of immigrants' contributions to German culture ( $r = .27$ ) at an extremely significant level

( $p < .001$ ).

At the same time, other participants' responses seem to reveal a form of positive ingroup identification more cultural than national, embodying the ideal of patriotism as "pro-ingroup" without being "anti-outgroup." Simple ingroup preferences (for German movies, music, language and culture, books, lifestyle, and so forth) loaded on the second component rather than the first, along with a more European and (marginally) more regional than German identity, more of a focus on Germany's past relative to future, as well as more acceptance of immigration and foreigners' (sometimes negative) appraisals of Germany.

Taken together, these results suggest rather compellingly that Germans' relationships to their national identity has changed across generations and varies somewhat by region, and also that patriotism and nationalism may indeed be overlapping but nevertheless separable constructs. Some individuals

evinced the positive attitudes about their culture and acceptance of (though not preference for) others that one might associate with patriotism, yet were less likely to describe themselves as patriotic. By contrast, the people who self-identified as patriotic Germans were, ironically, most likely to show signs of nationalism—as indicated by endorsement of the military, national anthem, and ethnocentrism—rather than benign patriotism. To answer, finally, the question posed in the recent patriotism debate, saying one is "proud to be German" is indeed problematic. Trouble arises, however, not because German patriotism itself inevitably involves aggression, extremism, or ethnocentrism, but because the very act and attitude of endorsing *overt* pride in German national identity, despite its threefold historical stigma, may tend in the direction of nationalism.

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# A Highly Compliant Passive Antenna for Touch-Mediated Maneuvering of a Biologically Inspired Hexapedal Robot

*Emily Ma*

*A highly compliant, sensor-lined antenna probe can provide mobile robots with tactile information about immediate surroundings for exploration and localization. Analogous in structure and function to insect antennae, this type of antenna probe can be especially useful for feedback to highly dynamic and complex platforms such as fast running legged robots, providing direct information about the geometry of the environment in a robust manner despite the rapidly changing state of the system. Inspired by the effectiveness of cockroach antennae for feedback during rapid legged locomotion, we have designed and calibrated a passive artificial sensor-lined antenna to provide feedback control in a biologically-inspired, hexapedal running robot. We then suggest the process for designing a simple wall-following controller, based on the sensor calibration and the robot's running and turning dynamics, and present preliminary results.*

## Introduction

Insects have absolutely extraordinary sensing abilities. Often behaviorally active in low-light levels, insects commonly rely on non-visual senses for self-orientation and navigation. Specialized mechanoreceptors for detecting contact and strain on filamentous support structures such as animal vibrissae or arthropod antennae (Fig. 1) provide tactile cues from the physical environment to augment poor or non-existent visual guidance [8].

In designing sensors for a robot to gather geometric information about its surroundings, the above biologically-inspired tactile approach provides a

compelling alternative to traditional sensing methods. Common localization methods such as sonar, capacitive, or inductive proximity sensors are highly dependent on the sensed object's surface roughness, reflectivity and material properties. Vision-based methods can be computationally-expensive and can fail under low visibility due to low-light conditions or high air-particle content.

In nature, antennae are highly flexible structures that undergo very large deflections that cannot be analyzed with classical beam theory, which assumes that deflections are small given high beam stiffness. More importantly, the antenna is highly responsive in the passive mode. When moving slowly, cock-

roaches do actively probe their surroundings with their antennae. However, when moving quickly, cockroaches let their antennae stream passively alongside their bodies, holding the base of each antenna at a fixed angle. This behavior is clearly exhibited in the behavior of insects as they move alongside walls. Camhi and Johnson have shown that the cockroach *Periplaneta Americana* can, in fact, control wall-following maneuvers with high fidelity in response to tactile feedback from their antenna [3]. In this light, our goal is to propose a new biologically inspired tactile sensor system and accompanying model-based controller for a hexapedal robot based on

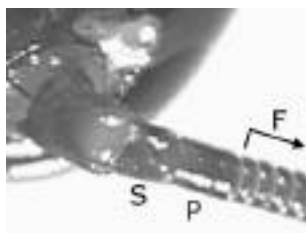


Figure 1. Close-up of the cockroach *Periplaneta Americana* antenna. The proprioceptive active base is composed of the scape (S) and pedicel (P). The passive flagellum (F) forms the rest of the length of the antenna.

these two themes: high flexibility for robustness and passive feedback sensing for control of a highly dynamic platform.

### Tactile Sensing in Mobile Robotics

Two interrelated areas of work to note include the use of antenna-like and whisker probes for sensing in general robotics and tactile sensing solutions on dynamic mobile platforms.

Whisker probes are often used in robotics to actively explore an environment. Such probes are either mounted on a stationary platform and actively actuated at the base or fixed on a slow moving platform with a predetermined path. These probes most often take the form of an insensitive flexible beam made from either a short length of stiff piano wire or hypodermic tubing anchored at the base. When the free end of the cantilevered beam is loaded in contact with an external object, bending occurs and deflection is sensed by a piezoelectric element or simple switch. Russell [9] used a simple whisker and considered only contact at the tip to simplify an analysis of loading. With a controlled slow moving platform, Russell was able to successfully and accurately detect and recognize complex shapes. Kaneko and Ueno [5, 13] then proposed an actively controlled antenna that allowed for the detection of a contact point anywhere along the beam length, using just a joint angular sensor and a torque sensor at the base of an inflexible beam. Given classical beam deflection principles that assume high material stiffness, it was shown that such beam deformation is small enough to justify a linear approximation and that the contact length from the

fixed end of the beam is simply proportional to the rotational compliance of the beam in contact with the object. Hence, a series of slow, active motions could resolve the contact point. Though passive sensing without utilizing active motion has been investigated by Brock, Salisbury and Tsujimura [1, 10, 12], again, these methods are slow, and require moving platforms to serve the sensor.

Tactile sensors in fast and mobile robotics have mainly functioned as threshold-binary proximity sensors for simple obstacle avoidance. Antenna-like whisker sensors were also mounted on SRI mobile robot Shakey [7], as well as Rodney Brooks and Shigeo Hirose's legged robots, for simple contact sensing [2, 4]. Whisker sensor arrays have also been used to control ground contact in legged locomotion [11]. Monitoring the separation between the foot and ground of a legged robot allows for foot deceleration before contact. Without a fast-response analog sensor, tactile feedback control of a dynamic mobile platform has not yet been well-documented or well-studied.

### Design criteria for tactile-based control of fast dynamic platforms

Previous work on tactile-based control, as summarized above, has focused mainly on the use of simple binary contact whiskers or active insensitive beams mounted on static or slow-moving platforms. The issues associated with developing a tactile probe for navigational feedback to a fast dynamic

legged robot in an unstructured environment are very different. Clearly, active probing is not possible for a robot running at speeds upwards of five body lengths per second (Fig. 2). Moreover, the antenna must be robust enough to survive large impulsive forces due to collisions with obstacles. Finally, for the purpose of obstacle avoidance and wall-following, copious amounts of data to describe the environment accurately are not necessary—data acquired from the sensor should be minimal to quickly process for rapid control, but enough to respond to the environment accurately.

Such design criteria for this dynamic platform demand a high degree of compliance for robustness, minimal sensing and simple passive control. With current sensor technology, it is possible to make a compliant, robust, sensor-lined antenna. Given this, and a good sensor model, we are able to use a simple proportional-derivative controller manually tuned to the robot's turning dynamics that enables our robot to successfully wall-follow and avoid simple obstacles in unstructured environments.

## Antenna Sensor Design and Calibration

### Electromechanical Design

A highly compliant and light Spectrasymbol Flex Sensor serves as our base antenna sensor. The conductive elastomer that lines the length of

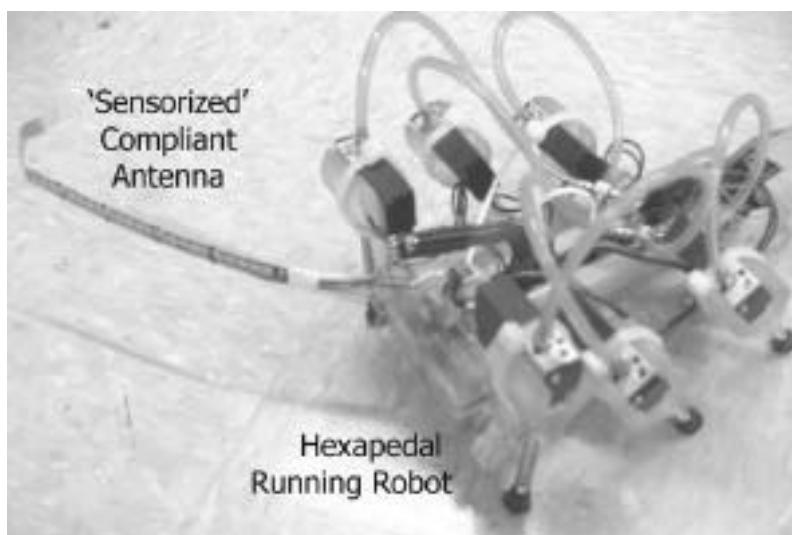


Figure 2. Sprawlette, a hexapedal running robot guided by a simple tactile sensing artificial antenna.



the sensor changes in electrical resistivity proportional to the strain imposed on the elastomer caused by bending or flexing. Though it is possible to extract from the basic sensor the degree to which it is bent, there is no way to detect the point of greatest strain or to differentiate between different shapes the sensor is bent into which have the same total curvature values. We show that total curvature information is sufficient for basic feedback control and suggest a method for extracting further information from this passive compliant resistive sensor below.

The antenna is fixed from the base at a 45 degree angle to the upper right hand corner of the robot to maximize contact with the environment. The antenna is also extended by a thin strip of transparency film fixed to the distal end to increase the likelihood of detecting obstacles further out from the body. Finally, the entire antenna is plastically deformed into an initial curved state to ensure further elastic deformation in the preferential direction of the sensor when in contact with an obstacle.

## Sensor Model

Consider the simplest setting in which we are given only the total resistance along the antenna as shown in Fig. 3. In this model, we assume that the distance  $y$  from the robot to the wall is related to the total curvature and hence resistance of the flex sensor according to

$$y = y_0 - K_y(R - R_0) \quad (1)$$

where the nominal resistance  $R_0$ , nominal distance from the wall  $y$  and proportional gain  $K_y$  are fixed, known constants. We show that this model is sufficient for simple proportional-derivative control. However, further information can be easily extracted from the passive flex sensor by tapping into the sensor at various points along the length. This provides discrete local curvature information, and thus improved shape information.

Using five segmental measurements of resistance along the length of the antenna, we determined a strong linear correlation between these sensor inputs and world parameters  $y$  and  $\theta$  using a simple least-squares fit as an initial attempt at data-fitting (Fig. 4).

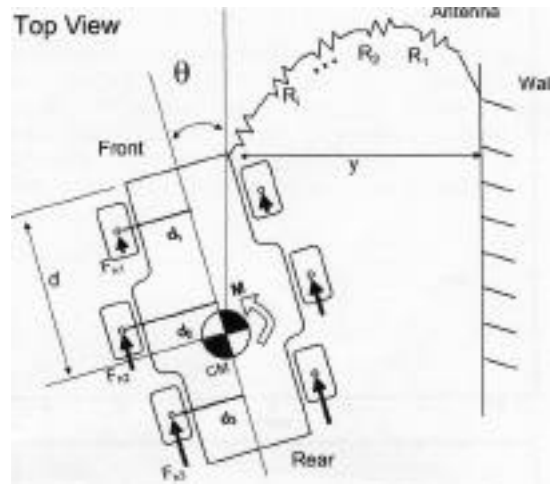


Figure 3. A simple model of Sprawlette making contact with the wall using its antenna. We assume that the distance  $y$  from the front right corner of the robot to the wall is a monotonic function of the total resistance  $R_T = \sum_{i=1}^5 R_i$  of our artificial antenna sensor.

The least-squares method provides us with the best linear approximation with the least computation. Not only did these extra sensor inputs improve the accuracy of the distance measurement  $y$  from the wall, it is possible to now extract useful, albeit approximate, robot heading information  $\theta$ .

## System Identification for an improved sensor model

To calibrate the antenna, we placed the robot in several different orientations and positions relative to a planar surface. We collected trials for eleven wall angles ranging from  $-20$  to  $30$  degrees and seven wall distances ranging from 60 to 120 mm. Each trial yielded a data pair—given a certain position  $d$  and orientation  $\theta$  ‘input  $x$ ,’ we obtained a set of five segmental resistance values representing the ‘output  $x$ ’ (Eq. 2). Assuming that the transformation  $A$  from  $x$  to  $y$  is linear, we use least-squares to approximate this transformation as  $\hat{A}$ .

$$\begin{aligned} X &= [x^{(1)} \dots x^{(N)}], x^{(i)} = R \in \mathbb{R}^5 \\ Y &= [y^{(1)} \dots y^{(N)}], y^{(i)} = \begin{bmatrix} d \\ \theta \end{bmatrix} \quad (2) \\ Y &= AX + b \\ \hat{A} &= YX^T(XX^T)^{-1} \quad (3) \end{aligned}$$

This simple affine model results in a residual norm or mean-squared error of 4.5 mm for distance (7.5%) and  $7.2^\circ$  for angle (15%) as shown in Fig. 4. The combination of this increased accuracy of distance fit and a rough heading

measurement allows for the development of improved control models based on this larger set of parameters. A closer linear fit of  $\theta$  to the antenna sensor measurements arises from the observation that the sensor dependence on  $\theta$  is negligible beyond distances of 80 mm from the wall. Thus, simply bounding the data set to a distance range of 60 to 80 mm yields a lower residual of  $4.9^\circ$  (10%). Though this first least-squares calibration is adequate, the improved results in restrictions of data range suggests that a piecewise holonomic linear model would be better suited for the calibration of this type of sensor.

## Horizontal-Plane Dynamics of Sprawlette

Sprawlette is a highly compliant robot with six legs, and two actuators per leg: a low-power shape actuator that changes the orientation of that leg’s pneumatic power actuator (Fig. 5). Although a detailed 36-state, 12-degree of freedom (DOF) dynamic model has been developed for accurate simulation, we hypothesize that a low dimensional, horizontal-plane template model will suffice for many sensor-based maneuvering tasks. An abstracted template model, when used appropriately, affords a deeper analytical understand of overall systems dynamics.

In straight-ahead running, Sprawlette can operate using no sensory feedback by fixing the pneumatic valve timing to generate an alternating tripod gait, and holding the six shape

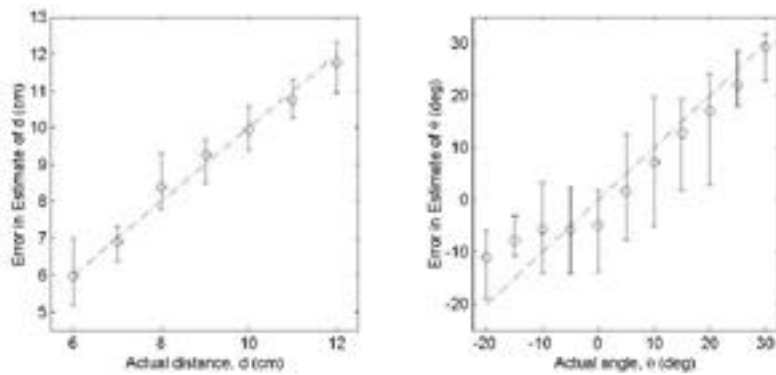


Figure 4. Left: Calibrated distance values vs. actual distance values for 60 to 120 mm range. Right: Calibrated angle values vs. actual angle values for -20 to 30 degree range.

variables to a constant posture. Then for turning behavior, by varying the phase and duty factor of each valve together with the angle of each servo motor, an 18 dimensional control space,  $U$ , is generated, which McClung [6] have yoked into a virtual control parameter called the turning factor,  $u$ . In short, the turning factor  $u$  parameter allows us to simply actuate a maneuver, given sensor determined parameters of the robot with respect to the wall.

## Antenna-Mediated Wall Following

### Controller Design and Results

For the purposes of an initial proof of concept, we have used only total curvature information for control. Basic wall-following behavior was selected to validate the concept of robust feedback control using our passive compliant sensor. A simple proportional controller was implemented to demonstrate that given sensor measurements and the ability to actuate rotation, Sprawlette could maintain a specified distance from the wall. Although simple proportional feedback had been implemented such that

$$u = K_p d \quad (4),$$

where the proportional gain  $K_p$  is manually tuned, large expected oscillations persist. The robot tended towards the wall but would respond much too quickly, moving too close to the wall, which in turn, drove it to move quickly away from the wall. This unstable or non-convergent response is clear in trials 1 and 5 (Table 1).

Such oscillatory behavior was tuned out by adding a derivative term

such that

$$u = K_p d + K_d \dot{d} \quad (5),$$

where  $K_p$  and  $K_d$  are tuned gains and  $d$  is the velocity of the robot moving towards the wall. This proportional-derivative controller was then manually tuned to show significant improvement in damping the oscillatory nature of the proportional controller. Results show that the best controller (Trials 3 and 4) requires a high  $K_p$  coupled with a non-zero  $K_d$ .

### Notes on Implementation

The above proportional and proportional-derivative controller were implemented in analog hardware, pre-processing the sensor input before passing the signal to the robot microcontroller 10 kHz ADC ports. The unknown resistance of the antenna sensor with respect to a nominal resistance set by balancing a half-bridge circuit of resistors and examining the output signal. Both proportional and derivative gain components of the circuit were built to filter out high frequency noise about 50 Hz since the robot turning bandwidth was approximately 1.5 Hz [6]. This analog circuit allowed us to manually tune our gains  $K_p$  and  $K_d$  as well as our nominal point with ease.

## Conclusions and Future Work

We have demonstrated that high-integrity wall-following behavior of a biologically-inspired hexapedal robot can be driven by a passive compliant tactile antenna sensor and a simple proportional-derivative controller tuned to the steering dynamics of the system. Thus, we conclude that passive and compliant probe sensing for feedback control to a highly dynamic mobile platform is not only practical but effective.

Future work will focus on two areas: optimizing and implementing the multi-segmental sensor design and calibration for passive compliant control, and developing a model-based controller to exploit the work done by McClung [6] on system identification of the steering dynamics of the robot. Overall, we hope to develop experimental and theoretical groundwork for the further exploration of passive compliant sensing and control for other task driven behaviors.

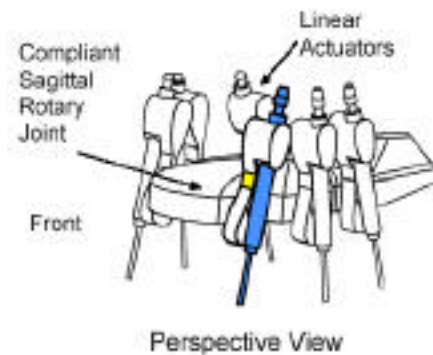


Figure 5. Pneumatic leg actuation and sagittal plane joint compliance of the bio-inspired hexapedal robot Sprawlette.

Trial	$K_p$	$K_d$	Rise Time	% Overshoot	15% Settling Time
1	6.0	0.0	$2.0 \pm 1.0$	$1.2 \pm 0.1$	Did not converge
2	6.0	0.8	$2.7 \pm 0.1$	$2.6 \pm 0.8$	Did not converge
3	10.5	1.4	$0.7 \pm 0.1$	$30\% \pm 10\%$	$1.9 \pm 1.1$
4	13.2	1.8	$1.0 \pm 0.6$	$28\% \pm 34\%$	$1.2 \pm 0.4$
5	17.5	0.0	Unstable	Unstable	Unstable
6	17.5	1.4	Unstable	Unstable	Unstable

Table 1. Resulting behavior from trial runs of Sprawlette given independently tunable gains  $K_p$  and  $K_d$ .

## Acknowledgements

The author would like to thank Dr. Noah J. Cowan and Professor Mark Cutkosky for their continued support

and mentorship, the members of the Stanford Biomimetics Robotics Laboratory and the Berkeley PolyPEDAL Laboratory. This work is supported by the Stanford Mechanical Engineering Summer Undergraduate

Research Institute, by the National Science Foundation under grant MIP9617994 and by the Office of Naval Research under N00014-98-10669.

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# Interactive Media Are Not The Future of Storytelling

*Bernardo Malfitano*

## Introduction

There is much hype nowadays about interactive electronic media as the future of storytelling; their immersive and emotion-inducing potential only being hinted at by all the efforts to generate meaningful, artistic experiences from them. Because of this hype, one could easily be fooled into thinking that for successful game designers, games are a narrative or story-telling medium, i.e. that well-designed videogames must necessarily tell a story. This is simply not the case.

What is a well-designed game, then, if not a rich story? Well, it is engaging, fun, immersive, and requires a way of solving problems which, once incorporated by the player, makes the player “at home” in the game. *Tetris*, *Doom*, *Metal Gear Solid*, good fighting games—and especially the simple classics of the 1980s—are fun because one could figure out exactly what the game wanted, deliver it, and make visible progress because of it. Each challenge in the game is only slightly different from the previous, and once the player has the format of the challenges figured out, the game becomes easier but at the same time more rewarding. All those frustratingly unsuccessful attempts at the game finally pay off, now that the gamer can deliver what the game wants of him.

One reason one would want to deliver is because the gamer cares about the game character. The gamer essen-

tially is the character, the character’s struggles are the gamer’s struggles, the character’s fears are the gamer’s fears. And to create this level of engagement and connection, this caring, a story is an effective device. A story also transforms the spatial and symbolic puzzles which make up the gameplay (defeating a boss, navigating a series of platforms to get to the other side, dealing with hostile fighters and artillery during a bombing run, infiltrating a building with hallways full of bad guys...) into a supposedly meaningful conflict with an ending in sight.

Here we must ask ourselves some questions: Is a story necessary to get the player to care for the character? And, is a story so effective in getting the player involved? As you will see, I do not believe a story is necessary for a fun, immersive game. An exploration of both these questions should also show that, due to the nature of games, they cannot be a very successful medium for meaningful storytelling.



The classics of the 1980’s, like *Super Mario Brothers* and *Space Tetris*, had simple tasks for the gamer to figure out, but this is not so different from modern games.

*This paper explores why many videogames tell stories, why many videogames don’t tell stories, why no game should aim to primarily tell a story, and why no videogame story can possibly be as meaningful as the stories in film, drama and literature.*

## Why a Story is Not Necessary

The challenge of a game is in its symbolic puzzles. Even the most modern of games, such as *Time Splitters*, *Metal Gear Solid*, *Tekken*, *Ace Combat*, *Tomb Raider*, and their sequels, all challenge you to press the right buttons at the right time in order to respond to quickly-changing aggression, and to figure out what sequence of actions opens up the opportunity for progress into the next challenge. In other words, the most realistic games can be stripped of their fancy texture-mapped anti-aliased z-buffered polygons to reveal a basic core similar to the earliest games. This is demonstrated by the fact that in most 3-D shooters, a locked door cannot be opened even by the character’s most powerful weapon—the gamer cannot escape the puzzle that is finding the key.



The modern games I mentioned are fun at the abstract level; they are about knowing the abilities of your character and of his environment, about performing certain actions in certain places at certain times in order to make progress, and about figuring out what those actions are. Most game characters' abilities are so limited, and most environments so non-interactive that the gamer does not see people in a building, but entities in an environment, with properties and abilities different from those of real things (otherwise, Solid Snake's C4 should blast that locked door open). The story, then, plays the same role as realistic graphics and good animation: it dresses up the basic puzzles (and their entities and environments) to make them look like a real situation and to make the gamer think a real person might for some reason really want to do what the gamer sees the character doing.

The story also adds a sense of continuity to the series of challenges and puzzles: a big picture challenge that ties all of the game's smaller parts into infiltrating a base, winning a tournament, or simply defeating evil and saving the world. However, it is the process of fig-

uring out the relationships between the character's actions and their effects on their environment in different circumstances (and how these could be used to perform a task) that constitutes the fun, engaging, stimulating part of a game. It is what occupies the gamer's mind during gameplay. So no, a story is not necessary for a great game.

Great games have been made where the action is not dressed up as part of a plot—*Pac-man*, *Tetris*, *Mario Kart*, *Pilotwings64* and *Smash Brothers* come to mind. These games are good because the way they present challenges encourages the gamer to keep playing by presenting him with small but noticeable rewards as he learns and then masters the aspects and variables of gameplay. The player understands what the game wants and the properties of the character and environment progressively better. This enables him to solve harder and harder challenges, to better predict the consequences of his actions, and to think about a new challenge in terms of the game's logic and rules, but intuitively. Therefore, these old games are fun and always will be, and this is the reason why *Metal Gear Solid: The VR Missions* is every bit as

addictive as the other *Metal Gear Solid* games.

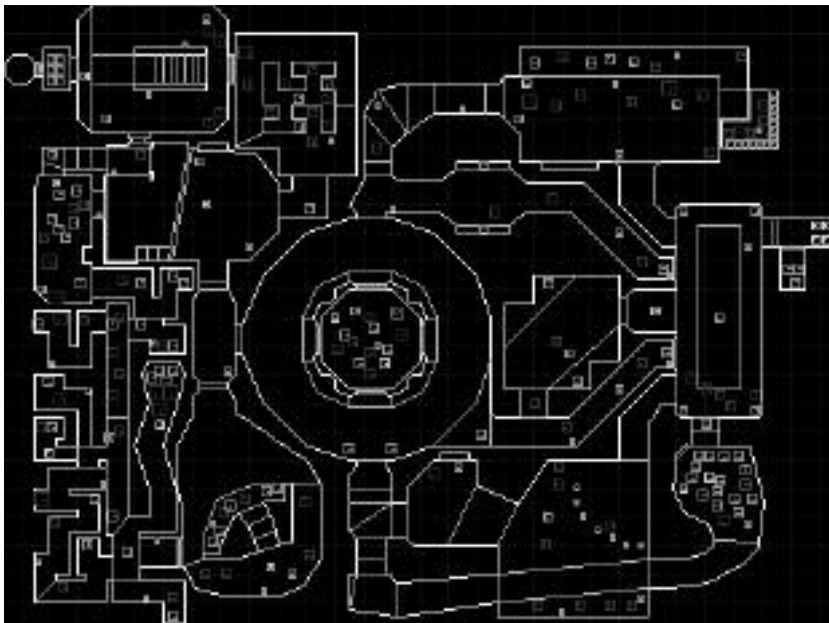
The makers of the *Solid Snake* knew that the style of challenges and gameplay in the game were fun enough to be successful without a story, so they then released a quasi-sequel to *Metal Gear Solid* subtitled *The VR Missions*. Here Snake faces many of the same challenges of the original game (navigating mazes, avoiding and following and battling enemies of many sizes, crossing spaces undetected), but represented by abstract symbols in space, rather than by soldiers and lifelike environments.

## The Incompatibility Between Narrative and Interactivity

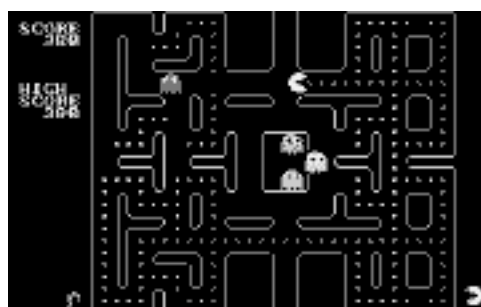
Steven Poole's book *Trigger Happy* explores further the inconsequentiality of a story in gameplay, and that of gameplay in a game's story. In his chapter on the use of stories in videogames, he makes the distinction between the synchronic and diachronic stories. The synchronic story—what happens in the game, the story made by the player—is “purely kinetic”, while the diachronic story—the background story, which is often a proper, real story—is “immutable”. Somewhere in-between are the full-motion video cut-scenes, which develop both the synchronic and diachronic stories, but are also immutable. Thus, any real progress in plot is always divorced from any interactive challenge. Decisions made during challenges based on timing, sequences of actions, or spatial navigation arrangements, are not the decisions that can change the course of a story, influence relationships, or reveal something about human nature.

This is why games are not fundamentally a storytelling medium. All of the actions to which the player is restricted are kinetic. The actions the character performs while under the gamer's control will never be meaningful in any way other than the symbolic solving of a puzzle or challenge. Any decisions involving emotions and values are made in the parts of the story that are not under the player's control.

Why can the player not interact with the synchronic story, i.e. with the plot, in any real way? The synchronic



When it comes to the basic challenges, tasks, and elements of gameplay (and not stories, graphics, or the point of view), most modern 3D shooters are little more than *Pac-Man* with guns. This can be clearly seen by looking at a real-time map of a *Doom* level, where the location of the enemies, power-ups and player are shown by different symbols in different colors.





Non-interactive cut-scene from *Final Fantasy 7* with unusually involved storyline.

story, the progress of the plot—changes in motivations or alliances or identities, the revealing of hidden relationships and interests, the death of a character, and the consequences of all these changes—involves variables that cannot presently be simulated by a computer. The plot will remain divorced from interactivity until computers become much more powerful, and until artificial intelligence allows game makers to include real-time emotion as a characteristic of video game characters who can understand their objectives and motivations in an abstract way and change their plans and alliances at their own will during gameplay. This happens to a very small extent today—storylines branch given different possible results of each battle—but the branching happens at specific, unchanging points, and only leads to a few discrete possibilities. The branching is neither dynamic nor in real time with near-infinite possibilities. In effect, the gamer may pick from a few possible endings, but not create his own. The gamer may play towards one or another ending

only physically and spatially. He may not create a new mission that will indirectly help with a battle effort, or try to convince the villain to change sides, or do himself the actions of a character he must protect. Even if the player can envision a different outcome for a situation in a game or a different story development, the computer running the game would not be able to execute it in real time without an impossibly advanced understanding of language or of human psychology and emotions. Computers cannot write stories. This is why any decisions involving emotions and values are made in the parts of the story that are not under the player's control.

### Second Chances Prevent Empathy

It is in the interest of a video game designer to give the player more than one chance in a game. In fact, the gamer has many tries—as many as he wishes—to attempt to go through the game in an optimal way. This is part of the fun of a videogame—doing it many times and mastering it—but also gets in the way of meaningful storytelling. One of the main purposes of narrative storytelling is to put the reader or listener in someone else's place, to allow someone to see the world through the eyes of a person in the past, or in a very different society, or in an imaginary society. The reader or listener comes to appreciate the struggles of the character, the fears,

the injustices, and the hopes of the character. Uncertainty and risk are essential to this appreciation (especially in mystery and suspense stories). A gamer simply cannot understand the worry felt by, say, a POW escaping a prison camp, or by a fighter pilot in a war—be it over the Midway islands or the Jovian moons—or by an athlete in a martial-arts tournament, etc., because the player knows that if something goes wrong, he can hit “continue” or start again from a recent save point. If the gamer only had one chance at the task, then maybe the difficulty and fears and struggles of the game character would be communicated, but no one would pay \$60 for a game that refuses to be played after one death.

This idea, based on the alternative world hypothesis, is explored in *Mind at Play; The Psychology of Video-Games*, by Geoffrey and Elizabeth Loftus. Psychologists claim regret in real life is caused by the awareness that if only a past action had been performed slightly differently, a much better outcome would have resulted. Most people worry on a day-to-day basis about the drive to make the right choices and not to make mistakes. But in a video game, the gamer does not have to live with their mistakes. The alternative world can be realized. Mistakes can be unmade, and their consequences (often death) can be fixed. As long as this is true, the imaginary world of the videogame is too easily manipulated and exploited to resemble the real world—or even the world in a novel or movie



A virtual Mitsubishi Zero prowls the skies over simulated WW2 Pacific islands looking for (or fleeing) American warplanes in *Microsoft's Combat Flight Simulator* (top left), and a similar but more futuristic scenario takes place in other places in the solar system in *Blast Radius* (bottom left). Then, in the most famous POW escape in videogame history, the controversially violent *Wolfenstein 3D* sees the gamer attacked by Nazis while escaping their base (right). In none of these simulated situations would the player understand the grave consequences of being killed.





The levels in *Tomb Raider 2* were designed not only to be player-friendly, but also aesthetically beautiful and intricate, faithfully incorporating the looks of their respective locales (Venice and Tibet, for example). This contributed to making the game successful and immersive.



– in any meaningful way.

Earlier I said that the character's struggles become the gamer's struggles. We now see this is not quite true. The gamer's struggle is to figure out how the character should go about solving his struggles in an optimal way. This figuring out often causes the character to die a reversible death, and this is an accepted part of videogaming. Therefore, the gamer often does not care about the character's life or immediate well-being. The player cares about the character because of all the work that has gone into mastering the controls and making progress in the game. Actions that do not compromise that progress in the long run are acceptable, no matter how painful to the character.

## Conclusion

The telling of a truly insightful, meaningful story cannot be achieved by placing a gamer in control of a character and giving the gamer many attempts

to do what the character would have one chance to do. Murray in *Hamlet on the Holodeck*, as well as Poole, Loftus, and Loftus, all briefly touch on this fundamental incompatibility between interactivity and narrative, but assume some way will be found around it, and go on to talk about the future of interactive storytelling. What they refuse to say outright is that the experiences provided by an interactive event will never be as insightful as the experiences portrayed in great literature. Interactive experiences may be immersive, exciting, educational, artfully made, and even potentially very emotional. But the insights acquired are about manipulating the environment and developing timing (although part of the pleasure of gameplay can be aesthetic, as in the beautiful environments of *Tomb Raider 2*, *Ace Combat 4*, or *Metal Gear Solid 2*, to name a few examples). These spatial and kinetic insights will not reveal anything profound about the human condition. A cut-scene, or the diachronic

story, might. But as we have seen, they are not interactive, and cannot be interactive until computers learn to write stories.

The levels in *Tomb Raider 2* were designed not only to be player-friendly, but also aesthetically beautiful and intricate, faithfully incorporating the looks of their respective locales (Venice and Tibet, for example). This contributed to making the game successful and immersive.

Some well-designed games tell a story, not as their ultimate objective but as a device to engage the player. And this story's progress, plot-wise, must be separate from the game's interactive experiences, because those interactive experiences are spatial and kinetic. This is why games should not aspire to tell us great, insightful, meaningful stories. But, of course, they should keep telling simple stories, because I would rather be saving the world than just navigating around collections of polygons inside a computer's imagination.

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# Victorian Los Angeles: The Ghetto and The Glory

**Andrei Pop**

*The goal of this paper is to present a new approach to the study of urban life in Los Angeles, one that is "site-centered" and historical rather than touristic. The site in question is a Victorian house that has, at some point in its century-old history, been turned into a set of apartments. First, we reconstruct the motives for the building of this and other houses of the type. A profile of the early occupants of Victorian houses in Los Angeles leads into a discussion of the demographic changes that have acted on South Central Los Angeles from the 1950s to the present. Finally, a personal recollection from the author's childhood in the house is presented, as empirical but for subjective corroboration for the historical analysis of occupancy and house usage. We shy away from totalizing pronouncements, but a connection can be drawn between the diversity of residents in Los Angeles' old Victorian neighborhoods and the phenomenon referred in some of the literature on urban studies as the "city of the future:" a city of minorities, in which no single ethnic group predominates.*

There are far fewer architectural histories than sightseeing books written on the subject of Los Angeles. The tyranny of the picture books is not only numerical but also ideological: most of the serious architecture studies ply the same picturesque, touristy terrain as the guides, hitting a series of high notes that seldom strays beyond the movie-friendly modernism of Richard Neutra and the Chemosphere, and the grab-bag of eclectic low art and consumer culture that is spanned by the Coca Cola Bottling Company, The Mayan Theater, and Simon Rodia's fascinating Watts Towers. This building "star system," perhaps not unexpected in its Hollywood environs, has had some curious effects on architectural discourse: in a city whose structure is so clearly dominated by commercial and popular forces, the everyday is fetishized, inspiring one writer to assert that Randy's Donuts may be the sufficient and necessary cause for the exis-

tence of the city of Inglewood (Parker, 35). This type of architectural snobbery, admittedly nourished by a wealth of interesting subject matter, presents considerable barriers to sociological or historical understanding of Los Angeles living: most Angelenos, for better or worse, have not spent any significant portion of their lives in the Coca Cola building or the Chemosphere.

Given the hostile environment in academic circles toward Los Angeles and suburban sprawl in general, alternate approaches to the study of Los Angeles are welcome. Reyner Barnham's notion of "ecologies," while presenting a spirited defense of Los Angeles as a *place to live*, does not entirely escape an easy fascination with the stomping grounds of the rich, namely "surfurbia," or beach estates. Charles Moore's definitive architectural guide, *The City Observed: Los Angeles*, explains the general method of reading the city. "Los Angeles is...a set of very

long streets or freeways or rides, and the places of interest are events along the way" (Moore, xiii). This is as shallow and unsatisfactory as the stereotype of the "valley girl." Needless to say, few Southern California residents construct the daily world around them, their work and home life, as a series of amusement park rides. What is needed is critical presentation of lived experience, and a local analysis of social and cultural forces that influence the way people live and use buildings. Following a historical analysis, the author will present such a biographical sketch for a particular Victorian house in South Central Los Angeles that he inhabited in the years 1993-1995, between the ages of 11 and 14. We will see how the evolving demographic of the area, particularly the heterogeneity of race, culture, and economic status, position Los Angeles as a "city of the future" (Jencks, 7).





View of facade of 2701 Menlo Avenue

## Genesis of the L.A. Victorian

Roughly speaking, the urbanization of Los Angeles by English-speaking settlers began around 1850. Formerly a sleepy Law of the Indies town located not far from a mission (San Gabriel), Los Angeles rapidly outgrew neighboring San Diego, as land speculation and subdivision in the 1870s and 1880s attracted businessmen and farmers (Fogelson, 150-161). The “paper towns” of the speculators were hastily developed into tract housing, but the new settlers “were not enamored by and large with Mexican traditions, and few built adobe houses” (Gleye, 54). A rough and ready style of home architecture known as the Monterey, which combined simple wood post-and-beam construction with ranch openness, came and went; by the mid-1880s, residents demanded explicitly “urban” dwellings, which for most of them meant the mid-Victorian Queen Anne style popular in their home areas, the East Coast and particularly the Midwest.

The Queen Anne is a bourgeois paradigm, designed for conspicuous display of wealth. Cheap lumber from the north, cheap labor from the south, and inexpensive tracts of land allowed

Los Angeles homeowners to build larger, gaudier houses than they had back East: turrets, pedimented bay windows, cornices, and stucco friezes abounded. Italianate columns, wraparound porches, and “gingerbread” detailing were also common, though the composite, unruly character of these buildings dictated that the less costly the house, the fewer embellishments were assayed. Strange though it might seem, the Queen Anne is in a sense the original postmodern architectural style, dependent entirely on self-reference and recombination for its effect: “the definition of artistry in building was not to design new architectural elements, but to combine ready-made elements into...pleasing patterns” (Gleye, 57). The history of the Los Angeles Victorians is long and varied. There is something Darwinian about it: from their early disavowal in the 1930s, to urban renewal in the 90s, Victorians have been partitioned, remodeled, and demolished.

Our particular two-story house at 2701 Menlo Avenue, nestled between the major arteries of Vermont Avenue and Hoover Street near Adams Boulevard, was built around 1900-1905, on a parcel of 7496.8 square feet. (This date is an estimate, as the Los

Angeles Department of Building and Safety does not release records on previous owners of tracts; however, comparative analysis with published Victorians on nearby Adams Blvd, 27th Street, and Monmouth Ave, dating 1890-1900, support the late dating.) It was decorated in a plain Queen Anne style that testifies to both the eclipse of the Victorian taste and the rise of the simpler Craftsman bungalow. The high elevation, steep roof and window decoration ultimately place the house in a Queen Anne-Italianate convention, and imply a well-off but undistinguished owner, in contrast to the flights of decorative fancy found in the Adlai Stevenson House a few hundred feet away on Adams (Gebhard & Winter, 1994, 267-269). Besides the bay windows with floral decorations, the house is notable primarily for a semicircular window above the entryway, and a façade turned 90 degrees from the street, facing a narrow concrete alley. Most contemporary buildings in the neighborhood face the street, but the orientation of 2701 Menlo makes sense in the Victorian domestic sensibility of conjoined protection and privacy—the house and its owners symbolically turn their backs on the neighbors. The little alley is a microcosm, with the small stoop hardly visible due to high railings. The impression created in the resident, unrealistic perhaps, is that comings and goings are made more discreet.

As integral to the distinctive L.A. “street look” as the house architecture was the collection of practical concerns and city ordinances governing the growth of neighborhoods. In the 1880s and 1890s, communities grew around the twin stimulants of streetcar routes and water availability from the Los Angeles River (Kaplan, 67-70). The Menlo Avenue housing tracts were conveniently located within easy walking distance of the downtown-bound streetcar line on South Vermont Ave; furthermore, the founding in 1880 of the University of Southern California on an 18-acre site adjacent to Exposition Park (Gebhard & Winter, 1994, 277), a block south of Menlo Avenue, prompted a wave of middle-class building as a population of professors and recent alumni sought residence within walking distance of the university.

## Mutations of the Victorian House and Street

In discussing initial development in South Central Los Angeles at the turn of the century, it is important to stress that the area was initially regarded as suburban and within a rather optimal distance of downtown, a good three or four miles away from the bustle and congestion, and yet easily accessible by public transit. Development of these suburbs followed pseudo-utopian strictures: the height of fences, walls, and hedges (usually no more than 4 feet), minimum home construction costs (ranging between \$2,000-\$3,500 depending on development), and bans on commercial buildings ensured a properly semi-rural, homogenous and sociable white populace (Fogelson, 154). Most of these regulations were renewed in perpetuity, meaning, for instance, that the block of houses of which Menlo Avenue is a subset still does not contain commercial buildings, although the economic and racial make-up of the neighborhood is more varied than it was at the time of development. Though architecturally unfashionable since at least the early 1910s, Menlo Avenue enjoyed several decades of sedate middle class existence. The sole omen of coming change was an increase in density, accomplished by the building of smaller Craftsmen bungalows in the inner lots (for example, down the alley from 2701 Menlo Ave). By the 1920s, two profound changes in the structure of metropolitan Los Angeles resulted in a major rethinking of the Victorian single-family homes on Menlo Avenue. These were, respectively, the population explosion and the rise of the automobile.

The catalyst for these changes was the University of Southern California, which rapidly became the economic epicenter of the neighborhood. Steadily increasing enrollment at USC throughout the economically vibrant 1910s and 1920s resulted in revisions of the general plan of the campus in 1910 and 1920 (Gebhard & Winter, 1994, 277). In a pattern that would become familiar in college housing, the university began building dorms and off-campus apartment buildings, but not enough to account for the net increase in the student population. As a result, several hundred USC students each year found

it practical to rent a room in the vicinity, an economic stimulus that many owners of Victorians found fortuitous, as the large houses (many with multiple entrances) easily accommodated boarders. But the crowding was hardly localized to the university: the economic boom of the 20s caused the city population to grow to 1,238,048 in 1930, double what it had been two decades previous. While much of the growth was outward (at 442 square miles, Los Angeles was already the largest city in the nation in area), the districts immediately outlying from downtown received a disproportionate amount of the population growth. This makes sense economically: between 1923 and 1931, the population within ten miles of the central business district grew 50%, but due to nearly maximal density and atrocious traffic, the number of people entering downtown L.A. grew only 15% (Fogelson, 153). Neighborhoods close enough to for convenient downtown access, yet not saturated, absorbed the newcomers like sponges, and Exposition Park was no exception.

The popularity of the automobile grew concurrently with the population. A "Greater Los Angeles" of dispersed, automobile-served communities was perceived by both planners and locals as ideal, and it merged with "progress-

sivist anger against the privately owned streetcar lines" (McClung, 192) to create a outlying meta-city whose populace had to adjust to pre-automobile settlement patterns. The Exposition Park suburb, for one, adjusted to the demand for housing in two ways: by tearing down many of the old Victorians, whose diffuse lots no longer made profitable use of the soaring property value, and putting in Beaux Arts apartment buildings (particularly along main arteries like Adams and Hoover), and by modifying and renting out the Victorians in their entirety. As Fig. 2 suggests, a steady demand throughout the 1920s for two-family dwellings and an escalating need for multi-family units could not have been satisfied entirely by the unsystematic apartment construction (Fogelson, 152). The Victorian houses must have been more efficient to rent than to tear down; certainly the addition of several exterior doors and corresponding hallway walls to turn 2701 Menlo Avenue into a four-apartment unit must have been a smaller capital investment than would have been required to tear down the house and build an apartment building of equivalent capacity on the premises.



View of 2701 Menlo Avenue facing street

## Victorian in the Riot Era

The conditions of semi-urban population density, augmented by a steady population of college boarders, made property in the Exposition Park neighborhood of Menlo 2701 quite sought-after, and prompted transformation of the Queen Anne house into a de facto apartment complex. The owners may well have lived in a smaller, more intimate bungalow in the vicinity; chances are good that they would have owned and operated several such houses in the area to students and young white professionals commuting to city offices. The Depression and World War Two may have stymied growth to some extent, but the population and industry of Los Angeles grew steadily through the 1930s, and the area was not particularly hard-hit. The status quo of a predominantly white neighborhood of heterogeneous age and occupation would have continued unabated through the renewed economic growth of the city in the 1950s and 1960s, were it not for the momentous events that transpired in nearby city of Watts in 1965.

The Watts riots influenced Los Angeles race relations for the three decades that followed; they also had a marked impact on demographics in much of formerly white South Central Los Angeles. Watts had been predominantly black since the migrations of the 1950s, during which rural blacks from the South settled in Watts and Compton, searching for temporary residence while they sought employment. As Elizabeth Poe wrote in the thoughtful post-riot meditation "Nobody Was Listening," "Though nearly a million dwelling units have been built in Los Angeles County since 1940, no more than 1.4 percent of these new houses are available to minority groups." Rather than an outbreak of sub-white savagery, as was believed by most commentators, the turmoil embodied desperate direct action by frustrated wage workers who saw no way of escaping urban poverty, which they had hoped would be temporary. As Reyner Banham argued, Watts had been strategically located in the days of the railroad. The freeway made the town both commercially and socially marginal (Banham, 155).

The Watts Riots were decisive in the white flight that saw many white residents unaffiliated with the

University leave their Victorian houses in Exposition Park, either to rent them out as absentee landlords or to sell them on the rapidly depreciating market. The attendant dip in housing prices allowed Latino families which had previously been confined to the Barrio east of Downtown to settle closer to their workplaces, renting houses and apartments along Menlo Avenue. Black movement from further south in Central Los Angeles occurred at a lower rate; the Exposition Park neighborhood borders a predominantly Hispanic area of Los Angeles (Jencks, 26-30). (The charts are based on 1990 census data.) The ethnic heterogeneity of the area, with no group forming a majority, has been a feature of Exposition Park since the late 1960s. To observe the dynamics of this heterogeneity in the present time, we turn now to a (necessarily subjective) account of my childhood in Los Angeles.

## Life in Apartments A and D

On April 29, 1992, at 3:00pm, four police officers on trial for the beating of Rodney King were acquitted by an all-white jury in suburban Simi Valley. Forty-three minutes later, a store clerk in middle class Hyde Park threw a rock at a white motorist, inaugurating days of looting and arson. Racial frustration and material envy prompted some of the violence, but essentially the riots were born of the same sense of political helplessness that had sparked the Watts Riot nearly thirty years earlier. Yet the 1992 riots were a brand new beast: "the first multi-ethnic uprising, the first civil disturbances led by several minorities [Black, Hispanic, Asian] trapped in inner city poverty" (Jencks, 84). (The racial tensions during the riots, particularly Black-Asian antagonism, are more complex, but for the scope of this essay, I address the riot as a pan-ethnic violent protest against urban disenfranchisement.) I did not know this at the time, but I did notice that the video store at the corner of Hoover and Adams was burnt to the ground. At the time, we lived in an apartment building for USC staff on the corner of Adams and Portland Street, across from the Second Church of Christ Scientist, the green dome of which defines the southbound skyline as seen from the Santa Monica

Freeway.

I was eleven; my sister was six; and we lived with our parents in a two-bedroom apartment. When we moved to 2701 Menlo Avenue a year later, the more secluded locale had nothing to do with our decision: the cost of rent at the USC complex had risen from \$800 to \$900, which with utilities and mandatory cable, totaled over \$1000, or more than half of the Pop family's monthly income. (As teaching assistants, my mother and father earned \$10,000 a year each.) Apartment A at 2701 Menlo Avenue was in a comparative state of disrepair, and was not furnished, but rent was only \$800, and we expected further relief when family friend Cornelius Hoffman would move into the smaller of the two bedrooms, several months into the lease. My sister and I shared the voluminous living room: besides a television by the bay window and a salvaged couch, we had set up mattresses in opposite corners of the room, and desks for both of our schoolwork. A narrow kitchen and smaller bathroom did not comfortably satisfy the needs of five residents, but the master bedroom my parents shared was considerably larger than their previous room, and was the only room in the house with a fireplace.

Daily routine at 2701 Menlo Avenue was strangely isolated from the street outside. The bay window had thick blinds that were kept drawn during the day to keep out heat. Behind the house, we locked our bikes to water pipes servicing the house, which did not prevent them from being stolen over the two years we lived there. The interior proved to be warm in the summer, cool in the winter, and durable enough during the Northridge Earthquake of January 17th, 1994, in which the only damages suffered were surface cracks in the street-facing wall, which were never repaired.

We lived in Apartment A for the duration of the 1993-1994 school year; when Cornelius moved to a new apartment on 27th Street with his wife (recently arrived from Romania), we moved a couple of feet to the right to Apartment D, the first-floor right wing of the building, whose windows faced the innermost bungalow. The apartment was smaller and presumably cheaper. Again, the master bedroom was the only room with a fireplace; unlike Apartment A, there was no hallway

connecting the living room to either of the two bedrooms, suggesting to me that the apartment was an annex not in the original plan of the house. This suspicion gains credibility when I recall the rainfall that frequently leaked through the living room ceiling, indicating that the room was not in fact directly below the second floor Apartment C.

Relations with the neighbors in 2701 were likely to be as close or distant as with neighbors further down the street: my parents got to know those who were their own age, while we knew the college students primarily by appearance. I played with the Latino kids across the street at times; but I did not know them well, because they did not attend 32<sup>nd</sup> Street USC Magnet School, as I did. Parking on the street was scarce, and only the one or two houses on the street had their own garages. People were friendly; they hung out on porches in the evening, and re-parked cars whenever a closer parking space opened up. Three houses down Menlo Ave. toward Adams, an empty lot about three parcels across made for an interesting playground until it was fenced in our second year

there; the house to the right of the empty lot was abandoned, with boarded-up windows. During the summer, an ice cream truck plied the street, turning the kids in a chorus of satisfied customers.

## The Future of L.A. Victorian

If my two years living in a Victorian house in Los Angeles did not add up to a cohesive experience, maybe this is because my age and immigrant status precluded me from knowing the history of my house and my area. I had never been so “out of context” growing up in a Romanian urban environment. Indeed, the experience of life on Menlo Avenue was full of contradictions: I remember thinking it unsafe for my grandfather, on a visit from Romania, to go for a walk down the street in my crime-prone neighborhood, yet I walked home from school with my sister nearly every day. The neighborhood was in fact safe, unless one was a male in late adolescence. Within the house, I wondered why the walls were so tall

while there was not enough horizontal room to go around.

I knew even less about the other people living on the street: whether they had been born in Los Angeles, if not where they had come from and how they had arrived to live their lives in such indifferent proximity to me. At any rate, it seems clear that without knowing it, I was living in what Charles Jencks, in the daringly speculative *Heteropolis*, calls the “city of the future”: a city where there are only minorities. No single ethnic group, no way of life, no profession dominated the place I lived (Jencks, 7). The urban greenery Jencks describes, the varied fauna (opossums, raccoons, squirrels), the plurality of vegetation and human habitation were all there. The Victorian house was not born into a pluralistic tradition, but by hook and by crook—by modification and subdivision and lengthy decay and recycling—it has served as a meeting ground of cultures. Its future may indeed be open to combinations we have not foreseen.

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# Cultural and Social Attitudes Towards Mental Illness in Ho Chi Minh City, Vietnam

*Anne Nguyen*

*The mentally ill receive a mixed response across all cultures. In the developing world, they are subjected to severe stigma and mistreatment, but in some cases are helped by community support structures. This paradigm is especially the case of Vietnam. Two months of research in Ho Chi Minh City, conducted through interviews and surveys, found that the Vietnamese are divided when it comes to caring for the mentally ill. Traditional beliefs that attribute psychiatric disorder to moral transgression and misconstrue the dangerousness of patients evoke shame and fear of the mentally ill. Such beliefs inhibit the pursuit of psychiatric treatment. At the same time, families and communities are devoted to nurturing the sick and shun abandonment. Societal attitudes also profoundly affect mental health care. Vietnamese values and beliefs influence care-seeking behavior, treatment outcomes, and even determine the way psychiatry is practiced. The following research illustrates the social and cultural factors that contribute to modern day views of mental illness in the urban south of Vietnam and the impact of such views on the lives of psychiatrists and families of the mentally ill.*

## Introduction

Throughout Vietnamese history, those afflicted with mental disorders have been misunderstood and mistreated. Current societal beliefs about mental illness not only affect the origins and maintenance of disturbed behavior, but have implications for prevention, early intervention, and community treatment as well [1]. A better understanding of detrimental attitudes and potentially helpful outlooks is necessary to improving the lives of mentally ill people within Vietnamese culture.

## A Note on Terminology

Before delving into the Vietnamese view of mental illness, it is necessary to examine the terminology associated with psychiatric disorder. Words often

hold cultural connotations that cannot be precisely replicated or are lost in translation. In the U.S., mental illness refers to a number of behavioral and psychological disorders that produce a range of mild to severe dysfunction. Mental illness, or *benh tam than*, as it is referred to in Vietnam, is a term approximately equivalent with madness, or severe psychiatric disorder. The severity of a disorder is defined by its potential to negatively affect those around the sufferer, rather than aspects such as curability or potential for self-harm. Psychiatrists are referred to as *bac si tam than*, which literally translated means “doctors who treat madness.” *Benh tam than* carries the stereotyped connotation of wild, unpredictable, and dangerous persons. *Bac si tam than* implies the ridiculousness of those obligated to care for them. *Dien* and *khung* are the colloquial terms approximately

equivalent to “crazy” or “nuts.” In everyday situations they may be used to joke or tease, but when implemented in a serious tone, they evoke fear and apprehensiveness. Each of these words not only reflects Vietnamese biases, but also shapes the way they think about mental illness.

## Vietnamese Beliefs System

The blending of many different beliefs, values and traditions has molded Vietnamese thought with regards to mental illness. Two concepts are fundamental to the Vietnamese perception of mental illness. These are *nghiep chung*: suffering and karma, which are rooted in Buddhism. In a country where much of the population lives under the poverty line of \$90 per year and the national average income is \$300



Tattered buildings and dusty streets face the Mental Health Center in Ho Chi Minh City where I conducted many of my interviews.

per year [2], suffering is everywhere. The Vietnamese explain each individual's misfortune by linking it to misdeeds committed in a previous life [3]. A person afflicted with mental illness is inheriting punishment for his own previous sins or for the sins of his entire family [4], while simultaneously penalizing the family with his dysfunctional behavior. Another supposed cause of insanity is possession by angry ancestral spirits. Families avoid offending their ancestors for fear of the consequences [5].

The importance of family cannot be understated in Vietnamese relationships. The family is regarded as the fundamental unit of respect and cohesion. Households usually consist of three to four generations underneath a single roof, providing mutual support and caring for one another. Thus the good of the family takes precedence over individual welfare. In this context, a mentally ill person's outlandish behavior and the moral implications of his affliction are regarded as marks of shame for his family, extended family, and ancestors. While families have the option of bringing mentally ill patients to psychiatric hospitals out of an obligation to care for them, sick members are commonly hidden or confined within the household for as long as they can be tolerated in order to prevent familial disgrace [6]. Feelings of guilt, shame, and weakness inhibit the Vietnamese from admitting mental health problems and delay treatment [7]. Individuals, for their part, avoid openness with personal difficulties, and will forgo the cost

of personal mental health in their desire to preserve peace and harmony within their relationships.

### Causes of Mental Disorder

Beliefs regarding the causes of mental disorders hover between the natural and the supernatural. They vary according to an individual's level of education and socioeconomic class. In less educated areas of the countryside, there exists a number of supernatural explanations for mental illness, including spirit possession, black magic, or astrological misalignment [8]. Among the educated class surveyed in Ho Chi Minh City, however, most attributed mental illness to natural causes. It is believed that mental stresses or emotional strain due to events such as trauma (*soc*), lovesickness (*tin h tu*), or simply thinking too much, produces weak nerves that make one susceptible to a psychotic disorder. It is a common belief that high school and college students can fall ill from studying too much. Even in the hospitals, psychiatrists are issued shorter working hours than other doctors, lest the strain of being around mentally ill patients for too long cause the doctors to "go crazy" as well. Organic causes of mental illness include heredity and head injuries. In recent years, however, the Vietnamese government has attempted to expel the notion that psychiatric disorders are passed on by inheritance, which otherwise severely reduces marriage prospects for the entire family [9].

## Traditional Medicine

Traditional medicine plays an enormous role in the Vietnamese medical system and is often the preferred method of treatment for a variety of illnesses. Families who believe in supernatural causes of illness will seek the assistance of fortunetellers (*thay boi*), bonzes (*thay phap*), and witchdoctors (*thay phu tuy*). Traditional healing is more revered among the masses than psychiatry because of its long history of integration into Vietnamese culture. There are over 10,000 traditional healers in Vietnam, compared to merely 600 psychiatrists [10]. Traditional healers are also more economically amenable to their patients [11]. The cost of treatment from a bonze is lower than the cost of psychiatric drugs and overnight stays. The high number of traditional healers also makes them more likely to be locally accessible, eliminating the cost of transportation to a large mental health facility. Finally, there is no stigma attached with going to a traditional healer who treats all diseases as there is with going to a doctor who only treats mental illness. Psychiatry is commonly seen as a last resort.

## History of Psychiatry

The origins of Western psychiatric treatments influence how they are viewed today. An explanation of the history of psychiatry in Vietnam will further uncover why it is still considered a last resort. In the early 20th century, while Vietnam was still a French colony, the French introduced psychiatry as a means for confining insane persons and political dissidents to institutional care. In 1919, they established the first psychiatric hospital in the southern province as Bien Hoa, later recognized by locals as the "Crazy House at Bien Hoa." In 1936, another hospital was established at Bach Mai, near the northern city of Hanoi. At a time when clinical psychiatry was underdeveloped, these institutions were designated as prisons more than treatment centers [12]. They were regarded as the final destination for those whose behavior could no longer be tolerated or controlled by folk remedies [13].

The slow transition towards clinical psychiatry began during the 1950s. In 1957, psychiatry and neurology



Patients in the Bien Hoa Mental Institute still occupy some of the older buildings, formerly used as prisons. With the transition to modern psychiatry, patients are no longer confined behind bolts and locks.

entered the medical school curriculum in Hanoi. In the south, however, psychiatry was not taught until 1977 [14]. The advent of psychiatry coincided with emerging socialist ideals, which depicted mental illness as a national burden preventing individuals from participating in socioeconomic development and productivity [15]. During this period, hospitals began switching from being custodial wards to being treatment centers.

While mental health care underwent this transition, public attitudes remained unchanged. Beliefs that had held sway for hundreds of years continued to stigmatize those who sought help for mental health problems, and doctors associated with the disease were also looked down upon. It was in this hostile environment that the first psychiatrists began their practice. Since that time, many efforts have been made to reform the old system that dealt with patients inhumanely. Doctors, however, continue to struggle with mixed views towards their position.

## Becoming a Psychiatrist

Already viewed as an undesirable choice for patients, psychiatry is also seen as the final option for medical students. “When I was a medical student, the last thing I wanted to be was a psychiatrist” [16], confided one doctor. During the 1960s and 70s, the socialist government assigned new doctors to their positions based on academic ranking. The worst students were assigned to the least desirable professions, with

psychiatry at the bottom of the list. Today, medical students are allowed to choose their profession. Nevertheless, entrance into psychiatry is still accompanied by trepidation and more motivated by economic necessity than actual attraction. New doctors who are not immediately accepted into a specialty must work without pay until a position opens up. If they cannot afford to do so, the other option is to apply for a position at the mental hospital, where there is always an opening. Psychiatrists are the butt of jokes among their fellow doctors and medical students. A bit of absentmindedness or a bad hair day might produce snickering comments that the doctors are beginning to resemble their patients [17]. Ridicule and pity replace the honor and respect psychiatrists had formerly anticipated from their medical education.

As in the case with mental illness, the dishonor of being a psychiatrist extends to their families as well. In addition to the mockery inflicted by their colleagues, psychiatrists are pitied by family members and shunned by relatives. One psychiatrist admitted, “My relatives have no idea about my career. I tell them that I am a doctor, but not what kind. They don’t know that I’m actually a psychiatrist” [18].

In spite of the social drawbacks, however, many psychiatrists find satisfaction with their work over time. When asked what he likes about being a psychiatrist, one doctor responded, “After treating patients for a long time, I feel like a member of their family. I understand and share their hardships.

This is the most enjoyable aspect about being a psychiatrist” [19].

## Practice of Psychiatry

Cultural ideas about mental illness as madness have molded the Vietnamese medicine’s approach to psychiatric treatment. Severe symptoms found in psychotic disorders such as schizophrenia and bipolar disorder are culturally characterized as *benh tam than*. It is not surprising that psychiatry has adopted similar attitudes. The most commonly diagnosed illnesses in mental hospitals are schizophrenia, bipolar disorder, epilepsy, depression, and anxiety disorder. The first three bear the greatest semblance to madness in terms of behavioral dysfunction. The last two are less socially disruptive and therefore seen less frequently.

Social deterrents against the pursuit of psychiatric treatment results in patients coming in later in the course of their illness, when the family can no longer handle them. Psychotic disorders at the later stages are then more difficult to treat, further diminishing public trust of psychiatric methods [20].

Pharmaceutical drugs are the most prevalent form of treatment. Anti-psy-



The shining finish on this treatment room in a newly renovated building at Bien Hoa Mental Institute demonstrates the drastic change that has taken place in the practice of psychiatry.



Parents watch over and care for their mentally ill sons in the men's ward of the Mental Health Center in Ho Chi Minh City.

chotic drugs have proven to be psychiatrists' one source of mastery over mental illness. These drugs have helped to win greater respect for the psychiatric profession by reducing the widespread misconception that mental illness is untreatable. Many drugs currently used in Vietnam are cheap, outdated and carry more side effects than the newer, more expensive ones. For impoverished families who have been supporting a dysfunctional member for years, however, cheap drugs are the only option. Psychotherapy, on the other hand, remains underdeveloped and underused because of its inexact nature and high cost.

### Filial piety

Despite the challenges faced by families who must care for mentally ill persons, those who pursue treatment persevere with intense loyalty. Due to the scarcity of staffing, family takes the

place of psychologists, nurses and social workers in the patient's rehabilitation process.

It is interesting to note that poor rural families are the least likely to forsake kin who are afflicted with a disorder [21]. Families' refusal to abandon even troublesome members is based on the Confucian notion of filial piety, which considers it better to bear the stigma of mental illness while nobly attending to one's responsibilities, than to be shunned for the careless refusal of familial obligation. Families are thus present at every stage of a person's disorder, even if they don't pursue psychiatric treatment.

Finally, love is part of the equation. A mother's love and faithfulness towards her mentally ill daughter is apparent in the following quote, defiant of cultural stigma: "Our family is not shy in telling others about [our daughter's] illness. I do not care about hiding it; I tell my neighbors straight. I explain to them that many people have one ill-

ness or another, and [my daughter] just happens to have this one... Sometimes the way [other people] look at her makes me feel so hurt inside. I love her so much and hate it when people look at her differently, call her crazy, and try to avoid her. They do not know that she is a good girl when she is not sick" [22].

### Conclusion

Vietnamese attitudes towards mental illness are multifaceted and complex. Social responses to mental illness depend on a variety of factors, including the type of disorder and its impact on social function, as well as cultural concepts and presuppositions about the illness. Concepts of mental illness are in turn influenced by values, religion, and the social context in which they are found [23]. Stigma is apparently interwoven with mental illness in Vietnam, not just for patients, but for their families and doctors as well. Suppressed emotions, family burden, social discrimination, and inaccessibility of mental health resources are only some of the outcomes of this stigma [24].

Nevertheless, there is hope for the mentally ill in Vietnam. The perceived danger and moral reprehensibility of mentally ill individuals that precipitate the fear and avoidance associated with such individuals can be combated through increased education and contact [25]. Recent government media campaigns in Ho Chi Minh City to increase awareness of the symptoms, treatment and nature of mental illness may prove to dissipate such long-held debilitating beliefs. Meanwhile, families will continue to support sick members by any means available to them, awaiting a time when their perseverance will be recognized.



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# Almost Liberal: The British Government of Hong Kong in the Mid- Nineteenth Century

*Alexander Robbins*

*Hong Kong serves as an interesting test case for the universalistic aspirations of British liberalism in the mid-1800s. Without ignoring the successes of the British government of Hong Kong, this paper seeks to examine some of its failings—particularly according to the rubric of universal liberalism. After discussing the historical and ideological context surrounding the establishment of Hong Kong as a Crown Colony, this paper investigates the early administrations' approaches to the three basic pillars of British government—criminal justice, economic policy, and political representation—with particular emphasis on the limits to the British government's realization of its own espoused ideology.*

## Introduction

**F**orty-nine years after Lord Macartney received a polite but condescending audience with the Celestial Emperor of China, the British found themselves on the threshold of a new epoch. They had decisively intervened in the Continent to defeat Napoleonic France and restore European stability, then safely withdrawn to their rapidly industrializing island under cover of the impenetrable Royal Navy. While Europe was alternatively radical and authoritarian, the British saw themselves as a people whose success and power flowed naturally from their ideals of pragmatism, liberty, and economic freedom. The idea of universal liberalism was at a zenith. With no natural enemies, with perhaps a little too much power for their own good, and with an amalgam of idealism and business interest, they set out to spread their political and economic creed to an as yet benighted world—and to prove to themselves the greatness of their own ideals.

They had their chance when Sir Henry Pottinger went against his instructions and acquired Hong Kong from China in the Treaty of Nanjing. Hong

Kong was an unimpressive piece of land: it had no pre-existing commercial value, nor any natural resources or agricultural productivity to speak of (Endacott, 3). It was also small, allowing the British to exert direct authority over every acre of territory to an extent impossible in larger possessions such as India. Accordingly, Hong Kong could arguably serve as a test case for the universalistic aspirations of British liberalism—a fact not lost on many liberals in 1840's Britain—and in fact the success of Hong Kong has been well documented to the chagrin of nationalists and Anglophobes. Still, without ignoring the successes of the British government of Hong Kong, this paper will seek to examine some of its failings—particularly according to the rubric of universal liberalism. After discussing the historical and ideological context surrounding the establishment of Hong Kong as a Crown Colony, we will investigate the early administrations' approaches to those three basic pillars of British government—criminal justice, economic policy, and political representation—with particular emphasis on the limits to the British government's realization of its own espoused ideology.

## Historical and Ideological Context

By 1842 the Opium War had ended in complete British victory. Tens of thousands of Chinese soldiers lay dead, the Celestial Empire's coastal cities smoldered in the wake of the Royal Navy's depredations, and—thanks to the invention of the steamship—the British penetrated into the Grand Canal and menaced Beijing itself. Many in Britain found such a slaughter repugnant; even the war's apologists found it rather embarrassing. Captain Charles Elliot, the British Superintendent of Trade before the Opium War and the first occupier Hong Kong after it, justified the war as one directed against the Chinese government for the liberation of the Chinese people—to Whitehall he bombastically reported a “general confidence amongst a teeming, rich, and most suspicious population, that we are understood to be the authors of their returning prosperity, and their surest protectors against the infatuation and oppression of their own Government” (Munn, 29). Sir John Francis Davis likewise declared that, in the aftermath of the

Opium War, the British could now “surprise the Chinese by shewing them the Miracles of peace as well as of War,” allowing them to witness “commerce flourishing in the absence of restrictions, property and person secure under the protection of equal laws, and in a word, all the best fruits of science and civilization transplanted direct from the European headquarters” (Munn, 22).

Such rhetoric was admittedly more than an empty apology for the depredations of the Opium War. Adam Smith’s ideas had long since penetrated mainstream British political opinion, appealing to both the radically as well as the more pragmatically and conservatively minded. In an example of the pragmatic case, Lord Aberdeen—the Colonial Secretary—wrote to Sir Henry Pottinger—the Colony’s first official governor—in 1843, that Hong Kong could easily become a credit to the Crown if by “the introduction of those liberal arrangements by which foreigners would be encouraged to come, a great commercial entrepôt were created” (Endacott, 21). Pottinger obeyed, establishing Hong Kong as a free port opened to all comers, regardless of race, class, or nationality—though with a hint of the vacillation to come, it took a supplementary treaty in 1843 to open up the colony to Chinese merchants (Endacott, 15).

The idea of free trade at this point in British history was not merely one “liberal arrangement” amongst many: it was the ideological cornerstone of both British foreign policy and British claims to superior and progressive government.<sup>1</sup> As succinctly observed by Sir John Bowring, a future governor of Hong Kong, “Singapore owes its great success to Free Trade” (Bowring, 214). Another British politician, Richard Cobden, was far more idealistic than Aberdeen and more rhapsodic than Bowring. He saw in the principle of Free Trade a force of liberation and progress:

*“I see in the Free-trade principle that which shall act on the moral world as the principle of gravitation in the universe, – drawing men together, thrusting aside the antagonism of race, and creed, and language, and uniting us in the bonds of eternal peace.”* (Porter, 14)

Cobden exemplifies the strong contemporary British ideology that passionately sought to advance the lot of all mankind through a policy of economic liberty, particularly with respect to commercial activity across political borders.

His vision was not exceptional, but it was one that was very much influenced by the very age that it helped to create. The free trade principle justified wars and conquests—if not those with the goal of profit, then at least those by which influential Britons might incidentally benefit. As such it made for a type of idealism advantageous enough to make a tenable political platform.

Besides this milieu of ideological justification and altruism, there were some more concrete political motives surrounding Pottinger’s acquisition of Hong Kong. As he wrote to Aberdeen in justifying his disobedience, Hong Kong would become both “an emporium for our trade and a place from which Her Majesty’s subjects in China may be alike protected and controlled” (Pottinger, 106), and accordingly the positions of Governor and Superintendent of Trade were given to the same man for the first decade of British rule (Endacott, 20). Finally, given its proximity to southern China, there was the rather obvious utility of Hong Kong as a military base in the event of any future conflict with the Celestial Empire (Darwin, 20-21).

Despite their manifold motives for acquiring Hong Kong, the British were—excepting the missionaries—generally quite uninterested in interfering with the day to day affairs or lives of the Chinese. Indeed, they were often quite conscious of their own tendency towards arrogance: one Member of Parliament, J.A. Roebuck, observed with rather paradoxical empathy that the typical Briton “has too great a tendency to self-esteem—too little disposition to regard the feelings, the habits, and the ideas of others” (Thornton, 3). This hands-off inclination, coupled with the fact that except for the missionaries practically no European residents of Hong Kong spoke any Chinese dialect, resulted in an almost complete social segregation between the Europeans and the Chinese of the colony. As Sir Bowring observed in 1858, “the separation of the native population from the European is nearly absolute...there is...an absolute abyss between the governors and the governed. We rule them in ignorance, and they submit in blindness” (Munn, 1). However strange, such a relationship was perfectly suited to the original purpose of British government in Hong Kong. The military had its base; the government its secure Far Eastern headquarters; the merchants their emporium; and the ideological Free Traders their chance to prove that economic liberty truly is a universal ideal. The two communities, European and Chinese, lived side-by-side in fact but

were oceans away in sentiment. They viewed each other as not just foreign but almost preposterous and incomprehensible (Munn, 19). Their two communities were economically intertwined but socially divorced (Munn, 13).

## Approaches to Economic Policy

Given such conditions, we should hardly be surprised if the economic element of British policy in Hong Kong was the most successful. Although the colony failed to live up to the initially wild speculations (both fiscal and rhetorical) of many Britons, it has since become both a nineteenth- and twentieth-century East Asian economic success story, with a current GDP per capita greater than that of Britain and more than seven times greater than mainland China’s.<sup>2</sup>

Still, rhetoric about free trade aside, the British administration brought with it a handful of often bizarre and somewhat medieval economic encumbrances. As the historian Christopher Munn (a critic of the British Empire but not from either the communist or the nationalist schools) summarizes, “despite Hong Kong’s status as a free port, its internal trade was encumbered with monopolies, licences, indirect taxes, and fees and charges, legal and illegal, of various descriptions” (Munn, 3). As mentioned above, it took the Supplementary Treaty of the Bogue in 1843 to allow the Chinese to trade freely in Hong Kong. Even after that, however, the insular nature of the European business community and their political influence often allowed them to drive out competition through politics rather than free competition. For example, Yung Wing, a rather famous Chinese subject who became an American citizen and the first person of Chinese extraction to attend an American college (Yale), attempted to practice law in Hong Kong. Within little over a month he was driven out of business through a combination of political and social pressure exerted by a nervous European legal community that knew it could not hope to compete with a *juris doctor* in common law who spoke Cantonese and English fluently (Munn, 215-216).

In another rather notorious episode the Chinese fared a bit better, though with no particular credit to Hong Kong’s economic administration. Being a free port, the Hong Kong government could charge neither tariffs nor income tax. As a result, one revenue-raising scheme it employed was the granting of legal

monopolies on certain goods, though generally luxuries rather than necessities. One such monopoly was opium, and in 1845 Fung-attai and Lo-aqui bought the opium monopoly from two Europeans and made a fortune off it. This wise business decision was most likely due to some rather adroit if unscrupulous maneuvering on the part of Fung and Lo. A few months earlier, Chief Magistrate William Caine had dismissed a case brought against an unauthorized opium-seller by the European holders of the monopoly on the grounds that the legal monopoly covered only opium intended for use in Hong Kong, and that the plaintiffs could not prove conclusively that the opium in question was not going to be sold across the border in China. This ruling made the monopoly effectively untenable—hence the fire sale price offered to Fung and Lo. Barely a month later, however, the Hong Kong Legislative Council amended the ordinance to cover any opium sold in Hong Kong, regardless of its eventual destination (Munn, 101). Whether or not Caine had been bribed by Fung and Lo—he *was* a man plagued by corruption allegations—such an incident reveals all too clearly the possibilities for the same sort of corrupt racketeering that, just across the border, was bleeding the Qing dynasty dry. At the very least such government-granted monopolies were hardly reconcilable with the economic liberalism dreamt of by Cobden.

Nevertheless, under British rule, the unexceptional barren rock that had been pre-1842 Hong Kong flourished into a thriving and economically vibrant commercial center, albeit somewhat more slowly than some of the more sanguine British speculators would have liked. In 1859, Hong Kong's sea-going volume of tonnage was 1,164,640; in 1878, it was 5,209,437. In 1859, Hong Kong's population had grown from a few thousand original inhabitants to an estimated 86,941—85,280 of whom were Chinese. By 1878, that number had again multiplied to 139,144—130,168 of whom were Chinese (Endacott, 80). As Hong Kong governor Sir John Hennessy reported in 1877, the Chinese in Hong Kong had come to own over 90% of the property and held over 90% of the currency in circulation (Endacott, 91).

Thus the Chinese residents of Hong Kong benefited directly and substantially from the liberal economic policy of the colony, for the most part free from discrimination thanks to a generally liberal British economic policy. Chinese nationals who held Crown land, for example, were able to register their ships with the

Hong Kong Port Authority to secure the protection of the Royal Navy on the high seas (Endacott, 91), and they often did. This policy led most famously to the Second Opium War, whose immediate cause was the Chinese government's seizure of a Chinese-owned ship registered in Hong Kong, although admittedly the British were already rather looking to renegotiate the Treaty of Nanjing.

In terms of implementing its liberal economic policy, then, the British administration in Hong Kong was remarkably successful, despite the occasional corrupt or interventionist pitfall. Yet we must remember that the ideology of British economic liberalism was never entirely divorced from a more evangelical desire to spread all aspects of "just government" and also remember that the British government in Hong Kong required far more than just a *laissez-faire* economic policy, as its officers soon discovered. Despite all the emphasis on Free Trade, the prevailing British liberalism also stressed the universality of the British style of government (Munn, 166); in fact, the two were often spoken about as though they were one and the same. Acting Governor Mercer rather arrogantly exemplified this view in a report to the Foreign Secretary in 1863:

*"Year by year the colony continues to improve its political and its commercial status... the natives of the mainland flocked to Hongkong in crowds after some few years' experience of it. Doubtless they did so from seeing means of trade, but plainly also because they saw here a difference in Government and consequently a superiority in British over Chinese forms. They could not but note a marked contrast as to the integrity of the Officials, the administration of justice, particularly the more humane system of criminal judicature and the greater protection of life and property... setting a praiseworthy examples before the people and the Government of China."* (Munn, 41-42)

As we have seen, the British were very much justified in looking to their economic policy with pride—a generally hands-off policy that was a perfect match for a colony comprising two different social worlds who could scarcely communicate with each other. Such a racial and cultural divide, however, became far more troublesome when the British found themselves actually required to create "the administration of justice" and establish a government representative of the interests of the whole population of Hong Kong.

## Approaches to Criminal Justice

While the utter gulf between the European and Chinese populations might have actually helped prevent the British from becoming overly interventionist in Hong Kong's economy, it was not nearly so beneficial when it came to maintaining law and order. The initial British plan was to remain at arm's length from the Chinese community, despite some ideological predilections towards spreading British law along with British economics. Even such a liberal as Bowring—whom one historian described as a "radical free trader, opium warmonger, and protégé of Jeremy Bentham: the personification of the imperialism of free trade" (Darwin)—could opine that "it is not fair or just to suppose that a course of action, which may be practicable or prudent at home, will always succeed abroad" (Bowring, 217). Accordingly, Aberdeen instructed Pottinger to establish regulations that, "while they satisfied the claims of the British," might "best conciliate the respect and fall in with the manner of the Chinese subjects of Her Majesty" (Endacott, 21). The initial British proclamation upon taking Hong Kong demonstrates both the intent behind and the inherent contradiction in the early British attitude towards criminal justice:

*"the inhabitants are hereby promised protection, in Her Majesty's gracious name, against all enemies whatever; and they are further secured in the free exercise of their religious rites, ceremonies, and social customs, and in the employment of their lawful private property and interests. They will be governed, pending Her Majesty's pleasure, according to the laws, customs and usages of the Chinese (every description of torture exempted) by the elders of the village, subject to the control of a British magistrate."* (Endacott, 28)

The elimination of torture was a significant departure from the Qing penal code, which actually required the use of torture to elicit the confessions used in convictions (Endacott, 9). Moreover, since across the border in China people *did not* have adequate protection, religious freedom, or secure property rights, Elliot's proclamation reveals some rather confused thinking, and sets the scene for the Hong Kong government's long and arduous struggle with the maintenance of

law and order.

The extremely transient nature of Hong Kong's population did not help. The vast majority of both the Europeans and the Chinese were not permanent residents, and the overwhelming percentage of the early colonial population was male (Endacott, 4). Moreover, the Chinese authorities were widely suspected of purposefully sending the dregs of their own populations to Hong Kong (Munn, 45)—not a particular startling accusation since, as we shall see below, the British found themselves doing exactly the same thing to China. In all, the prevalence of lower-class social elements in the colony was a frequent British complaint—as the traveling botanist Robert Fortune noted in the 1840's, "the town swarms with thieves and robbers, who are kept under by the strong armed police lately established" (Faure, 106).

It rapidly became clear to the British that, Elliot's proclamation aside, someone other than the "elders of the village" would be necessary to govern such a rapidly growing urban center. Although there was much discussion in favor of simply allowing Chinese imperial magistrates to exercise extraterritorial authority over the Chinese nationals in Hong Kong, it was eventually shelved due to a combination of British contempt for Chinese law, mistrust of the Chinese government, and the need to clearly establish sovereignty over such a tiny and—from the British point of view—dangerously Chinese enclave (Munn, 104). As the British legal office advised, the people of Hong Kong "should at once be considered and treated as subjects to the English government and to the laws which the crown of this country may think right declare" (Munn, 31).

Although the Chinese nationals in Hong Kong did not become British subjects automatically, many were by local ordinance allowed to do so, and anyone born in Hong Kong after 1842 became a subject by birth. The British did, however, decide to govern the entire population directly. Although the initial plan was still to employ a Chinese model, British scruples regarding criminal law began to interfere with its realization. In his instructions to Pottinger, Lord Stanley demonstrates this conflict between respect for local manners and the universalism of British justice, first admitting that "there will of course be in the island a large body of Chinese persons to whom the law of England would be a rule of action and measure of right equally unintelligible and vexatious" while in the next breath qualifying that no law should operate in the Queen's dominions that was

"repugnant to those immutable principles of morality which Christians must regard as binding on themselves at all times and in all places" (Munn, 32). Sir John Davis, Pottinger's successor, noted the same paradox: he observed that English punishments were ridiculed by the Chinese due to their laxity in comparison to Qing punishments. He remarked that the Qing punishments would probably be far more effective, "yet there is no possibility of enforcing their laws by British courts and officers without a compromise of principles which we are bound to maintain inviolate... no sagacity can discover a path to which plausible and well-founded objections may not be raised" (Munn, 36). Davis was quite right: there was no easy solution. Over time, however, and in the wake of continuing international conflicts with the Celestial Empire and the domestic outcry over a gruesome incident in 1845—in which a Canton mixed-court, staffed by British officials but following Qing law, ordered 30 people publicly starved to death (Munn, 217)—the Hong Kong and British governments began to view direct jurisdiction over the Chinese in Hong Kong as a better alternative than either yielding sovereignty or carrying out the rather illiberal Qing code.

In doing so, however, the British found themselves with a far more difficult task than merely allowing the economy to grow. As Munn puts it, "the heavy caseload, the high value placed by colonial rhetoric on justice, and the fact that, in most cases, Europeans were sitting in judgment over Chinese, made the administration of the law an important test of the claims of British rule." The test was a difficult one: to the untrained European eye the Chinese were very difficult to tell apart, due not only to the racial and linguistic divide but to the fact that the working class Chinese tended to wear similar clothes, have few and similar surnames, and only remain in Hong Kong for a short time. The linguistic divide, moreover, was substantial: Chinese dialects are tonal and difficult for most people, Chinese or otherwise, to learn. Also, up until the Opium War it was a capital crime in the Qing code to teach any Chinese dialect to a foreigner. As a result, in the early days of Hong Kong almost no Europeans could communicate with Chinese except in English or pidgin English (though with some exceptions—missionaries tended to be more linguistically adept, and Charles Hillier, a British magistrate, was supposedly able to hear cases in Cantonese). To make matters worse, the police were generally Indian or Malay, and so at times could neither communicate effectively

with Europeans or Chinese. Under such circumstances the observation of Lt. Col. Malcolm, the man who had carried the ratified Treaty of Nanjing back from London to Hong Kong, seems particularly apt: "when you consider that the people administering justice and the police do not actually understand the language of the people they are coercing and keeping in order, it becomes the greatest consequence that there should be as little interference as possible" (Munn, 111, 82, 66, 256, 150).

Unfortunately the British were not able to take this advice. For one thing, the crime rate in the colony was extraordinary. As discussed, the colony's inhabitants tended to be lower-class and transient, in addition to being inured to less-than-gruesome punishments by the excesses of the Qing penal system. In 1844 the periodical *Friend of China* remarked on the roving gangs of "idlers" that seemed to plague the colony. Four years later, in 1848, the *Hongkong Almanack* reported an "amount of crime, originating in the Colony, as would be sufficient to frighten respectable people from even coming, to use a maritime term, 'within hail of the place'." Even J.W. Norton-Kyshe, Hong Kong's first civil servant-cum-historian, claims that by 1847 Hong Kong had become the Triad headquarters for southern China and that three-fourths of the Chinese population in Hong Kong were members (Munn, 54).

The leniency of the British judicial system was only compounded by the intentional inefficiency of a common law which, after all, is designed to make it as difficult as reasonably possible to convict defendants. Out of a sampled 154 defendants in a ten-year period, the conviction rate for those with counsel was 41%; for those without it was 65%; and for Chinese who employed counsel it was only 37%. By 1848 the conviction rate had reached its historic nadir of 25% (Munn, 238). Such abysmal conviction rates were due to a number of causes, not the least of which was the substantial lack of legal training on the part of most law enforcement officials besides the Chief Justice, who heard most major felony cases and took appeals from his often incompetent inferior magistrates. The most substantial difficulty, however, was the previously mentioned mutual incomprehensibility of the Europeans and Chinese. In 1857 Bowring refused to give the death penalty, as required by statute, to 73 convicted pirates, arguing to the Colonial Office that:

"they were tried by a Judge and a Jury and prosecuted by an Attorney

*General who understood no Chinese dialect whatsoever and who had the facts conveyed to them by other Chinese who could not make themselves understood to all the prisoners but required still further interpretations for the own information, and with these facts before me I could not but hesitate before sending these men to be tried for their lives in this Colony.”* (Munn, 249)

At this point, although admittedly the system of justice was rather incompetent, the British certainly were abiding by the well-established liberal principle that no punishment is still better than unjust punishment. In responding to the difficulty of maintaining law and order, however, the British administration began to find itself slipping into a new bind. After standing on principle and refusing to replace the liberal British legal system with Qing code, the British found themselves gradually adopting more and more of the tendencies of the latter in response to this chronically high crime-rate.

One response, for instance, was an increasing reliance on the magistracy. The magistracy comprised a Chief Magistrate who oversaw upwards of a hundred Justices of the Peace, who in the British tradition held both administrative and judicial functions. In general, magistrates were local Europeans (though with an increasing Chinese minority as the century went on) of high social repute who lacked any formal legal training (Munn, 117). They were authorized to dole out summary punishment for minor infractions (Endacott, 74), though the definition of minor infractions became rather flexible. Thus one principle reaction to rampant crime was to rescue the Supreme Court from its deluge of cases and expand the sentencing powers of the magistracy to include such Qing punishments as public canning (Munn, 111).

Another response was to copy the Qing dynasty’s own vexatious legal practices: particularly sending “undesirables” across the border and outlawing as many common behaviors as possible so as to better control the population. In the late 1840’s, the Hong Kong government started allowing the deportation of beggars for violating a variety of public nuisance ordinances. Even in 1895 Governor Robinson wrote, in response to the questionable legality of the British adoption of sedition against the Chinese Emperor as a extraditable crime, that he considered it a bargain to get rid of “a few of the scoundrelly leaders of secret societies who harbour in Hong Kong” (Chan, 35).

The adoption of a slew of invasive governmental regulations was even more popular with the British government. Due to the previously discussed inability of many colonial officials to tell members of the Chinese population apart, the government passed statutes forcing locals to report crimes, and making failure to do so a punishable offense. The early Hong Kong government even imposed a nighttime curfew for all Chinese residents. When it was suspended in 1847 over doubts about its legality, Governor Davis defended it on the grounds “that Sir Henry Pottinger merely adopted... a rule which is notoriously universal in all their great towns, and it is difficult to imagine how a practice so familiar to them should influence them differently at Hongkong and on the mainland.” The British administration, after justifying its rather illiberal and at times explicitly racist criminal justice policies by appealing to the idea of cultural *laissez-faire*, then turned around and outlawed a whole host of traditional and harmless activities in regulations specifically targeted towards and enforced against the Chinese. In one proposed ordinance Governor Davis outlawed herb gathering, tree cutting, nighttime assembling, profanity, “indecent language,” begging, public bathing, fortune telling, and practicing magic. In a particularly low blow to the poorer members of Hong Kong’s Chinese population—many of whom had skin diseases—Davis even made it a crime to “expose any sore or infirmity to view with the object of exciting compassion or obtaining alms” (Munn, 119, 131, 147-48).

In attempting to govern the Chinese population of Hong Kong, the British administration—torn between a hands-off policy and a desire to introduce the liberal machinery of the English legal system—found itself implementing a somewhat incestuous mix of both: a legal system at once inept and oppressive. Behind this practice lay a somewhat confused jumble of rhetoric in which the British government appealed to universal human values to justify its sovereignty, but then used the alien nature of the Chinese to justify its departures from traditional British liberalism.

## Approaches to Political Representation

The British approach to political representation was much the same—here, too, the British found themselves continually compromising their universalistic rhetoric when the time came to actually

implement it.

The colony began, not surprisingly, under the complete dominance of the executive—i.e. the Governor’s Office. Lord Aberdeen and other officials in the British Colonial Office drew up a fairly typical executive-dominated Crown Colony constitution, which among other things established a established Legislative Council comprising officials in the colonial government and granted the governor emergency legislative powers if and when the Legislative Council was unable to meet—powers that Pottinger exercised for two years, since the council lacked a quorum until 1844. All actions of the governor and colonial government were subject to review from the Colonial Office, which in turn was bound by the laws of Parliament (Endacott, 1964, 27). Although in an early reform the Legislative Council was opened up to a few “unofficial” members—i.e. people who were not officers in the colonial government—the unofficials were never a majority, and initially were all appointed by the governor. Nonetheless, they were allowed to have their statements recorded in the minutes and sent back to Britain as an attachment to whatever ordinance they might have dissented to. In general, though, as Bowring put it in 1855, the Legislative Council was “an absolute nullity” (Endacott, 1964, 47). The degree of executive dominance was only increased by a subsequent decision by Lord Cardwell, the British Secretary of State from 1864-66, who established the doctrine that, as members of a purportedly parliamentary government, the official members of the Legislative Council were not allowed to dissent from the policy dictated by Whitehall or the governor without resigning (Endacott, 1964, 86).

The European merchant community, however, was by no means happy with this concentration of power in the hands of the governor and the government. After a series of disputes, most over taxation, the European merchant community in 1845 petitioned Lord Stanley for an unofficial majority of the Legislative Council. Not surprisingly, Stanley rejected it—the British gentlemanly capitalists<sup>3</sup> in British government could hardly be expected to willingly cede substantial political power to a handful of self-interested merchants. His rationale, however, was not so blunt. Instead, Stanley responded with an appeal to the same ideals of local autonomy and liberty that the merchants appealed to in their petition: he wrote that “the English minority can hardly be trusted with the powers which it would give them over

Chinese and other alien and ignorant ratepayers.” Simultaneously, however, Stanley evinces a deep distrust of the Chinese. Combining the above statement with Stanley’s other argument—that such a government would damage the “decisiveness and energy of proceeding which are almost necessary for the very existence of a European government surrounded by millions of Asiatics” (Endacott, 75-76)—Stanley’s line of reasoning appears to be that civilian British colonists cannot be trusted to adequately protect themselves from the Chinese *or* to treat them justly. Such reasoning, not surprisingly, comports well with the above-mentioned desire of the British to both restrain and protect their merchants within the Celestial Empire.

However paternalistic this attitude, the British government’s concern for the welfare of the Chinese inhabitants of Hong Kong—to whatever extent it was sincere—was not entirely unfounded. Indeed, from the earlier depredations of the American colonists against the Appalachian Indians to the later virulent racial oppression perpetrated by the British settlers in Rhodesia, the British Empire has had a long history of enfranchised or at least politically superior white subjects abusing the slightly darker ones, while the British Imperial government tries with varying degrees of success to restrain them. In the mid-nineteenth century in particular, the British government had a terribly difficult time restraining the nearby white settlers in Australia. On one side of the conflict stood Sir H. Parkes, a Member of the New South Wales legislature, who once stridently and rather rebelliously declared that “neither for Her Majesty’s ships of war, nor for her majesty’s representative on the spot, nor for the Secretary of State for the Colonies, do we intend to turn aside from our purpose, which is to terminate the landing of Chinese on these shores for ever” (Huttenback, 121). On the other stood an officer in the *Zongli Yamen*, or the foreign relations department of the Celestial Empire, who in a letter to Lord Salisbury correctly complained with regard to Parkes’ undertaking that, “having caused a study of the statutes to be made, I am advised that, in none of them, bristling as they are with pains and penalties directed against Chinese subjects, is there a single provision empowering the Executive to prohibit the landing of immigrants who are prepared to pay the stipulated poll-tax.” History suggests, then, that the Stanley’s concern for the welfare of the Hong Kong Chinese under the rule of the British or even European minority was

perfectly well founded, despite the fact that his response was simply to concentrate all political power in a far tinier handful of government bureaucrats.

Sir John Bowring, previously mentioned as a radical free-trader who practically exemplified the liberal British *zeitgeist*, proposed a sensible way out of this dilemma: allow all British subjects to vote without regard to race. Under his plan, drafted in 1856, there would be five unofficial spots on the Legislative Council, open to all *bona fide* British subjects of any race. Three of them would be elected by the Justices of the Peace (whose own ethnic breakdown was 69 British, 42 Chinese, and 30 other foreigners), and the other two would be chosen by an electorate comprising all land holders who paid a minimum annual rent of 10 pounds, regardless of race. According to Endacott the breakdown of this electorate would be 1637 Chinese, 186 British, and 176 other foreigners, though he fails to make it clear in what category he is placing the few score Chinese British subjects qualified to vote (Endacott 48-51). Significantly, the Legislative Council would still retain a bare official majority.

Whatever its concern for Her Majesty’s Chinese subjects, the British government’s rejection of Bowring’s proposal appealed explicitly to race. Labourchere, then Secretary of State for the Colonies, wrote back to Bowring that the “testimony of those best acquainted with them represent [sic] the Chinese race as endowed with much intelligence but as very deficient in the elements of morality.” Summarizing the racially paternalistic limbo in which the British administration seemed suspended, he declared that, in Hong Kong, “the proportion of Chinese to British is conclusive against any big change” (Endacott, 51-52), right before going on to repeat the argument that no British (presumably local) minority should hold power over an overwhelming Chinese majority. Here Endacott’s view, coming from the pro-British school, is very information. His interpretation of the dispute presents Labourchere as the progressive, and Bowring as just confused. Since Labourchere proposed in his response that perhaps one or two seats on the Legislative Council could be set aside for Chinese, Endacott concludes that “it was Labourchere, not Bowring, who made the liberal proposal that the Chinese should be considered for membership of the Council, and for administrative posts” (Endacott, 53). He makes this claim despite the fact that no one of Chinese ethnicity sat on the Legislative Council until 1884, and thereafter the Chinese

were represented according to a racial quota system that required the governor of Hong Kong to appoint at least two Chinese to the Council (Endacott, 102-04).

Although in 1856 the requirement that candidates for the Legislative Council be fluent in English and *bona fide* British subjects might have lent disproportionate influence to the non-governmental British community in Hong Kong, it would not have done so excessively and it would not have done so forever. At the very least, it would have established a genuine local autonomy in which race *per se* was no longer a barrier—after all, Chinese could become British subjects by birth or naturalization, and they could learn English, but they could certainly not become white. This, then, was the legacy of Labourchere’s “liberalism:” a Hong Kong administration that spoke liberally but acting with a tendency towards protective paternalism, as when in 1865 Whitehall forbade the Legislative Council from passing any ordinances without express permission from the colonial office “whereby persons of African or Asiatic birth may be subjected...to any disabilities or restrictions to which persons of European birth or descent are not also subjugated” (Endacott, 83). Fundamentally the British government of Hong Kong was much better at protecting its own Chinese subjects than it was at actually trusting them. It established a legalized racial separation and policy of patronization that lasted well into the next century, surely to the chagrin of some of the more idealistic British liberals, not the least of whom was poor Bowring himself.

## Conclusion

The success of British rule in Hong Kong is far too great to ignore, and denying that success is certainly not the purpose of the above discussion. All the same, Hong Kong never truly came into its own as a political entity. As historian Steve Tsang puts it, “the ultimate irony of British Hong Kong is that once the British government finally met the criteria of a good government, they couldn’t allow democracy because of the demands of the PRC” (Tsang, 78). By the time the British trusted the population enough to allow real democracy, they had signed the colony over to the PRC—despite the fact that a significant to an overwhelming majority of Hong Kong’s population preferred British to Communist Chinese rule.<sup>4</sup> Perhaps, then, this is the real tragedy of British imperial rule—not just in China

but across the globe. Despite the advances in living standards, material prosperity, political liberty, and personal security that the British brought to their possessions, they were never fully able to realize the dictates of their own ideology. Had the British trusted their own rhetoric and let their own white colonists live as a minor-

ity protected by a liberal British constitution whose dictates were backed up by an insuperable 19<sup>th</sup> century British military, non-white British colonies may well have remained dominions. At the very least, when they were decolonized, they could have faced independence with some fifty years of liberal democracy behind them.

Thus for all their successes, the liberal British—whose often-legitimate claims to political superiority over nations rested on economic freedom, individual liberty, and representative institutions—failed in the end to fully realize the universalism of their own ideals.

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## Notes

1. Cf. Robinson and Gallagher, "The Imperialism of Free Trade," *Economic History Review* (1953).
2. <http://www.cia.gov/cia/publications/factbook/> (visited 10 June 2002)
3. See P.J. Cain and A.J. Hopkins, British Imperialism: Innovation and Expansion, 1688-1914.
4. See David Faure, "Reflections on Being Chinese in Hong Kong," Hong Kong's Transitions, 1842-1997, Ed. Judith M. Brown and Rosemary Foot (Oxford: St. Martin's Press, Inc., 1997) 116; one 1988 poll, "Indicators of Social Development Survey," carried out by the universities in Hong Kong, reports that over half of the respondents believed that transition to rule by the PRC would result in a reduction in civil rights and individual liberty, and a deterioration in the living standard. 48% said they either trusted or strongly trusted the Hong Kong government; 30% said they also trusted or strongly trusted the British government; and 21% said they trusted or strongly trusted the Chinese government.

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# Polystyrene Microparticles as Handles for Optical Manipulation of CATH.a Cells

*Varun Saxena*

*Using a fixed beam with a fundamental Gaussian mode, a gradient force optical trap was used to translate a single cell using a carboxylated polystyrene bead as a handle. Currently, the force with which the optical trap can manipulate an individual cell alone is very weak. In fact, the inadequate nature of the optical trap on living cells has prevented this technique from being useful in most research involving single cells. However, under the experimental setup used here, the trapping force of a particular neuronal cell line, CATH.a, was increased by over 270% by using carboxylated polystyrene beads as a handle. As a result, optical trapping is now a feasible technique for non-invasively translating individual cells during research.*

## Introduction

**T**he development of gradient force optical traps (optical tweezers) has made the non-invasive manipulation of biological specimens possible with a single laser beam [1, 2]. With this technique, microscopic biological specimens can be individually manipulated, a capability invaluable for single cell control and resulting single cell experimentation. The single laser beam traps the biological specimen by imparting angular momentum on the focused biological specimen and thereby suspending it in place. Therefore, in moving the microscope stage, the biological specimen is fixed. This non-invasive technique is essential for many research projects including the publicized lab-on-a-chip.

In many experimental settings, the force with which optical tweezers trap specimens is insufficient. Thus, many studies have attempted to determine how to increase the trapping force. The force is defined by the simple relationship

$$F = \frac{Qn_m P}{c} \quad (1)$$

where  $Q$  is a dimensionless efficiency,  $n_m$  is the index of refraction of the suspending medium,  $c$  is the speed of light, and  $P$  is the incident laser power measured at the specimen [3]. Because biological specimens are usually suspended in aqueous media, the dependence of  $F$  on  $n_m$  can rarely be exploited to achieve higher trapping forces [4]. Increasing the laser intensity is possible, but only over a limited range due to the possibility of optical damage [5, 6].  $Q$  itself is therefore the main determinant of trapping force. It depends on the numerical aperture (NA), laser wavelength, light polarization state, laser mode structure, relative index of refraction, and geometry of the particle [3]. This study exploits the direct dependence of  $Q$  on the difference in refractive indices between the trapped specimen and the suspending medium. By increasing the refractive index of the trapped species while leaving the refractive index of the suspending

medium constant, the forces of trapping increases because  $Q$  increases.

Theoretically, trapping force is represented by Equation 1. However, trapping forces are experimentally determined relative to viscous drag exerted by the suspending medium. By measuring the maximum velocity after which the trapped species is lost from the optical tweezers, it is possible to determine the force by the following viscosity equation:

$$F = \beta v \quad (2)$$

where  $b$  is the drag coefficient and  $v$  is the particle velocity [3].  $b$  is typically given by Stokes' Law:

$$\beta = 6\pi\eta a \quad (3)$$

where  $\eta$  is the fluid viscosity and  $a$  is the radius of the trapped sphere. Using the measured maximum velocity and the radius of the specimen, the optical trapping force was calculated using Equations 2 and 3.

It has been shown that microscopic particles can be attached to biological

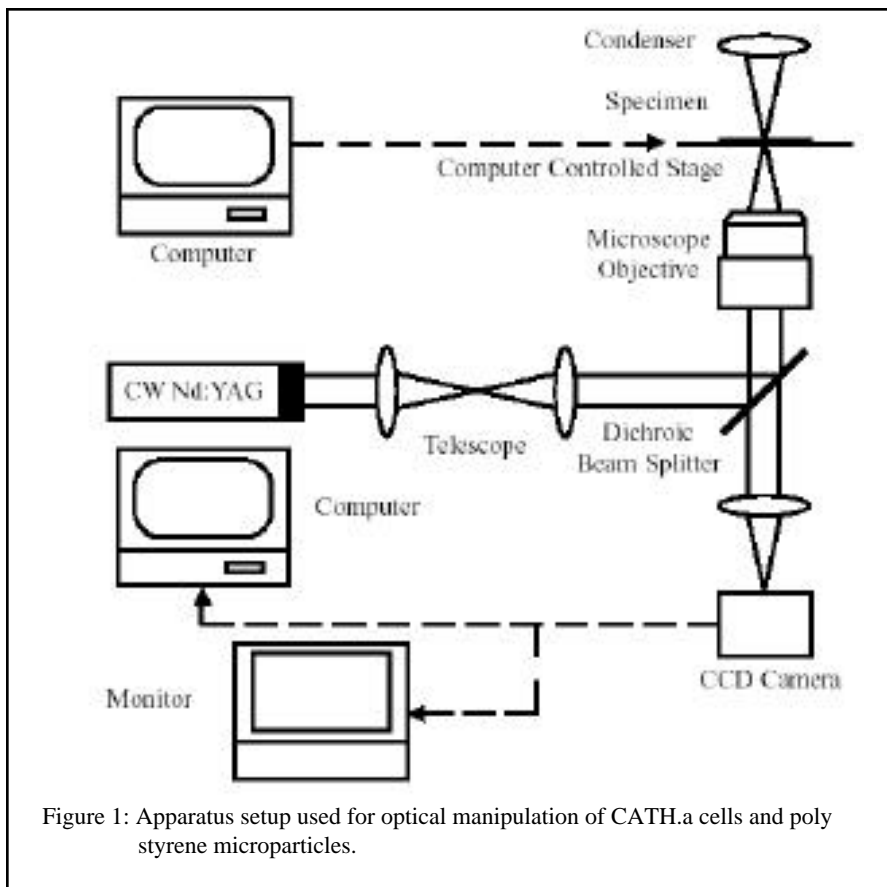


Figure 1: Apparatus setup used for optical manipulation of CATH.a cells and polystyrene microparticles.

specimens and used as handles in the rotational manipulation of biological specimen [7]. However, this study utilizes microscopic particles to enhance translational manipulation of biological specimen. Carboxylated polystyrene microparticles were selected as handles because of their large refractive index and their low cost. In this experiment, the polystyrene microparticles were trapped and made to adhere to CATH.a cells. The resulting complex is called a CATH.a/polystyrene bead complex. Once the complex was created, the trapping force on it was compared to that of the CATH.a cells and carboxylated polystyrene microparticles alone in order to determine the efficacy of using polystyrene beads as handles.

## Materials and Methods

### Sample Preparation

CATH.a neuronal cells were used as the biological specimen. A culture of CATH.a cells was grown in an isotonic medium (containing inorganic salts, vitamins, organic acids, and glucose). Prior to use, non-adherent CATH.a cells were removed from the culture and washed twice with Dulbecco's phos-

phate-buffered saline (Gibco) and then suspended in the same buffer solution. Carboxylated polystyrene microparticles were obtained from Bangs Laboratories (Fishers, Indiana). The spherical particles were 2.60 $\mu$ m in diameter with a refractive index between 1.57 and 1.60. Plastic coverslips were incubated in a 1% Bovine Serum Albumin (BSA; Sigma 33035) solution for 1 hour. The BSA coated coverslips were used to limit cell to coverslip adhesion. The proper concentrations of the carboxylated polystyrene beads and the CATH.a cells were mixed to allow for the formation of predominately one-to-one coupling. The resulting solution was placed on the plastic BSA coated coverslips. Solutions with similar concentrations of only beads and only CATH.a cells were also used as controls.

### Optical Tweezers and Force Measurements

The trapping force of CATH.a cells, polystyrene beads, and CATH.a/polystyrene bead complexes were measured. The particles were trapped by the laser beam and the critical velocity at which they were lost was measured. This measurement was

obtained by using the automated microscope stage (Prior H107X) to control the acceleration, speed, and displacement of the stage movements quantitatively. In order to utilize the automated microscope stage, a serial-communicating driver was written using National Instruments LabVIEW 6i. The CATH.a/polystyrene bead complexes were formed in two steps: (1) a bead was trapped and moved next to a resting, free cell, (2) the cell adhered spontaneously to the bead. The cell could then be manipulated using the polystyrene bead as a handle.

Figure 1 shows the experimental setup used for studying the optical trapping force on biological specimens. A continuous-wave Nd:YAG was used as a light source. The laser was operated in the near infrared with a wavelength of 1064nm. A current of 4.5 amps was applied to the laser using the Uniphase P3006 controller. The laser light was expanded with a telescope, reflected by a dichroic beam splitter (442nm/1064nm), and focused into the specimen plane through a high N.A. objective lens (Zeiss Achroplan 100x) in an inverted microscope (Zeiss Axiovert 135). The specimen was placed close to the focus of the objective and was backlit with an incandescent lamp. The specimen was monitored through the same objective lens as mentioned above and the dichroic beam splitter using a charged-coupled device (CCD) camera. Digital pictures were collected using a frame grabber on a personal computer (Scion Image).

## Results and Discussion

The optical trapping force data for CATH.a cells, polystyrene beads, and CATH.a/polystyrene bead complexes is shown in Figure 2. First, the average trapping force on a single CATH.a cell was 17pN  $\pm$  1pN (standard error), measured for eight CATH.a cells. This measurement serves as a baseline. Since the trapped specimens were not spherical, an average radius was used during calculations.

Second, the trapping force on a single polystyrene bead was 70pN  $\pm$  1pN (standard error), measured for eight polystyrene beads. This measurement serves as a standard comparison point. These beads were assumed to have a radius of 1.30 $\mu$ m, as specified by Bangs

## Force Measurements

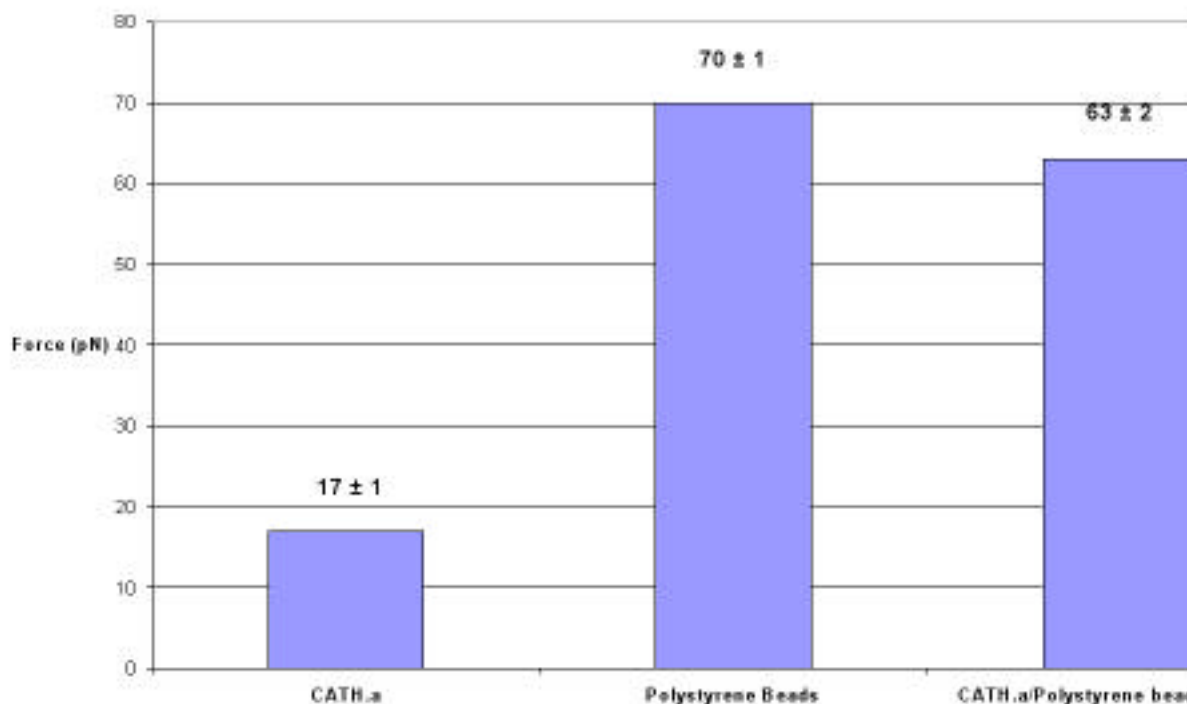


Figure 2. Force measurements on CATH.a cells alone, polystyrene beads alone, and CATH.a/Polystyrene bead complexes.

Laboratories. Finally, the trapping force on a CATH.a/polystyrene bead complex was  $63\text{pN} \pm 2\text{pN}$  (standard error), measured for six CATH.a/polystyrene bead complexes. The radii of the six complexes were measured independently. Figure 3 shows a sample cell/bead complex.

Although adhesion between the carboxylated polystyrene beads and the CATH.a cells was observed, the mechanism for this is unclear. At physiological pH, the carboxylated polystyrene beads have a negative surface charge. However, the phospholipid bilayer that makes up the majority of the membrane of the CATH.a cell is also negatively charged. Therefore, the mechanism of bead adherence upon CATH.a cells is not completely understood. Perhaps ionic interactions between positively charged transmembrane glycoproteins and the negatively charged beads accounts for the adherence.

The experiment has demonstrated that using carboxylated polystyrene microparticles as handles increases the optical trapping strength of CATH.a cells by 270%. It is important to note that Equations 2 and 3 predicted that the CATH.a/polystyrene bead complexes would exhibit a lower optical trapping strength than the polystyrene beads alone since the complex must have a

larger radius. The above experimental results agree with this theoretical analysis. Moreover, the technique can be advanced by using beads made of materials with a larger refractive index. This would further increase the optical trapping strength as given by Equation 1.

The observed increase in trapping force makes optical trapping a feasible manipulative technique in microfluidic devices. In particular, using a polystyrene bead as a handle for optical

trapping allows the manipulation of a single cell through devices such as the heavily researched lab-on-a-chip. In its theoretical form, the lab-on-a-chip is a fully automated microscopic chip that conducts certain reactions and the resulting analysis on individual cells. Using polystyrene beads as handles, optical tweezers can now be used to guide an individual cell through the chip.

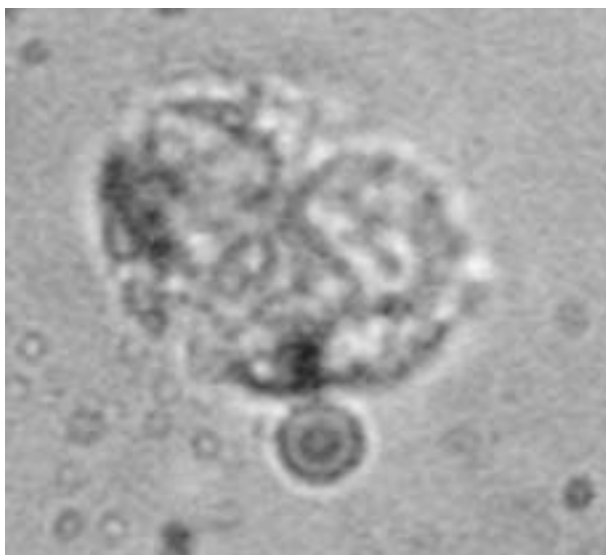


Figure 3. CATH.a/polystyrene bead complex. It is believed that the carboxylated polystyrene bead is ionically attracted to positively charged transmembrane glycoproteins.

## Acknowledgements

I thank Aaron Wheeler and Andrew Leach for technical advice throughout

experimentation. I also wish to thank Professor Richard Zare for generously providing lab space, equipment, and technical advice. Finally, thanks to the

Stanford Chemistry Summer Undergraduate Bing Research Fellowship for funding my efforts.

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# Information Recovery in Text-Only Discourse: The Effect of an Integrated Recovery Device on Conversation Structure

*Casey Riffel*

*Starting with Clark's description of the structure of embedded join projects, this article attempts to examine the changes that occur in the structure of discourse when the only medium of interface is text. To do so, a modern on-line "instant messenger" (IM) system is used to provide transcripts of text-only conversations. A standard convention of IM conversation is the use of what I call recovery devices: textual utterances which are intended to provide information present in face-to-face conversations which is lacking in IM conversations. Using the ability of IM software to integrate a recovery device into the conversation interface (via a feature called Direct Connect), I find that the device makes a statistically significant improvement in IM conversation orderliness.*

## Introduction

**H**erbert Clark describes the organization and structure of spontaneous conversations as emergent phenomena. The individual choices participants make in the course of a conversation cause a structure to coalesce. In this article, I approach the issue of conversational organization from the perspective of text-only discourse, motivated by the question: On what information do participants make certain decisions in conversation? According to Clark, all joint activities, including conversations, are dictated by the intersection of the common ground of the participants

and their representation of the situation (Chapter 2). Assuming that most decisions in conversation are made somewhat rationally, then they must be based on information extracted from at least one of these items. For example, decisions made about when to speak and what to speak about partially derive from the physical condition and spatial relationship of the speakers. And since decisions cause a structure to emerge, the organization of a conversation is based in part on the amount of information available via the senses. To examine this conclusion, it seems feasible to look at conversations in which not all of this situational information is present.

Text-only discourse, when carried out via the internet, provides a medium well-suited for this.

One widely used method of text-only discourse, instant messaging (IM), is an internet-based service that allows individuals to send text messages to any other user concurrently online. The various manifestations of IM software alter features somewhat, but the primary characteristics remain essentially unchanged across these platforms.

Take, for example, America Online Instant Messenger (AIM), where conversations are initiated by user A selecting user B and typing a string of characters and sending this string to user B,

<u>Category</u>	<u>Description</u>	<u>Some Examples</u>
Emoticons	Text used to represent facial expressions.	:-) , :) , :-( , :( , >=) , 0:-) , :-P , >=I
Ellipses	Explicitly marks pauses in an utterance	..... , ... no, its okay , ... yeah ... , ---
Descriptions	Refers to physical actions done by the user, and usually set apart by some bracketing.	*waves hand* , ::hug:: , lol , GROWL , (acts arrogant)
Extra Punctuation	Gives emphasis to an entire utterance, or portrays certain intonation patterns.	!!! , ?!?! , ????
Textual Emphasis	Gives emphasis to part of an utterance.	DONT , exactly , that , *not it* , NOW
Elongated Vowels	Expresses intonation for parts of an utterance.	NOOOO , yeeeeewwww , meeeeee
Spelling changes	Makes printed words more exactly resemble they way they would be spoken	coz , nahce , springay

Table 1: Categories and examples of recovery devices.

who sees only the finished utterance. This is akin to viewing mere traces of a conversation, which do not record the processes of composition. Indeed, B is not even aware of A's typing until the utterance appears on his screen. B then has the option of responding by the same process. AIM provides the interface through single windows on both users' computer screens; these windows display a record of the conversation as well as a text-entry field.

Despite the different mode of communication, text-only (TO) discourse still enables participants to engage in "conversation" comparable to face-to-face (FF) discourse. This relationship between FF and IM conversation provides us with a tool for examining differences in conversation structure, based on the existence of what I term "recovery devices," which are any features, techniques, or characteristics of either IM software or its users that recover information present in FF discourse but absent in IM discourse.

The postulation of the existence of recovery devices rests on the assumption that participants in IM conversation desire to make IM interaction more like

a conversation occurring in person. This assumption is based on the fact that IM's analogues for the key features of FF conversation lack many—in practice, every—characteristic of their partner in the real world. Moreover, as IM contact offers no suitable compensation for its impotencies, IM effectively reduces a person to their words.

Indeed, decisions and interpretations in conversations are not made solely on the basis of the words spoken. Instead, a person takes into account intonation, body language, and gestures, and he draws inferences from common ground. TO discourse strips utterances of virtually all this information, and misinterpretations and misunderstandings are bound to occur. Sarcasm may sound like agreement, and real happiness may become disingenuous. That is to say, the invaluable context of an utterance is often lost in an IM exchange. It is then reasonable that people will invent and employ recovery devices to make IM conversation more enjoyable and to reduce misunderstandings. I hypothesize that IM conversations include recovery devices for features of FF conversation.

Broadly, the recovery devices I postulate fall into three categories: physical, linguistic, and temporal. Physical devices provide information about people and their environment (body language, gestures, etc.), linguistic about emphasis and intonation, and temporal about speed of utterance and conversation hiatuses. This article is not an attempt, however, to construct an exhaustive list of recovery devices; it merely confirms their existence. The three categories are simply a rough heuristic.

The primary focus of this paper is on temporal recovery devices. An important feature of IM is that B is not aware of whether A is in the process of constructing an utterance (i.e. typing). Thus, the temporal progression of an IM conversation resembles a punctuated equilibrium rather than a continuous curve, thus disrupting various processes by which conversation structure emerges (because B will be always be unsure whether A has something more to say).

However, the ability of an IM conversation to be neatly structured in a hierarchy of joint projects is impaired

by the participants' inability to observe the status of the their interlocutor. The integration of a recovery device for this piece of information into the IM interface should produce conversations more ordered and structured than those without that recovery device integrated.

## Methods

Newer releases of AIM include a feature called Direct Connect (DC), that, when enabled, allows AIM users to gain to one additional piece of information about their interlocutor. When two users are directly connected, the chat window also displays whether the other user is typing or not. Directly connected IM conversations (DC-IMs) differ only in their integrated recovery device; all other variables are controlled across the two groups.

Transcripts were filtered only by the presence of DC; in my request for material, I asked only for any AIM transcripts that did not contain any sensitive information. I removed the participants' screen names and replaced them by A and B, changing any names or

addresses in the text itself. I also generated line numbers for each transcript, so as to produce a standard system of reference. Each conversation is labeled sequentially by its group: DC-IMs are D1, D2, ... , Dn, and normal IMs are N1, N2, ... , Nn-. Thus, to quote line 373 of D3, I would cite D3.373. The groups are thus referred to as the DC-group and the N-group.

For my purposes, an IM *utterance* is defined as any text which appears as a whole in the IM window. On transcripts, an utterance is all text after the speaker's screen name and the timestamp until the next speaker's screen name. For example, this excerpt consists of two utterances (N6.26-8):

A (00:39:59): And you and Justin are.

B (00:40:16): Justin is pretty much always on, far as i can tell.

The general working definition for this article is: a recovery device occurs when the actual text a user enters is intended to represent something other than what is actually entered. This presents two problems. First, there is

no clear consensus on what is actually meant by any single utterance, except that the intended meaning is dependent on situational information. Secondly, and more importantly for this paper, is the word "intended." Identifying a recovery device can be complicated because it involves guessing a speaker's intentions, which can themselves depend on recovery devices. However, many recovery devices are used with clear and conventional intent. For the purposes of calculating their frequency, standard subcategories are used (Table 1). The most common recovery devices have a patent meaning that is almost never varied. Emoticons, for example, cannot represent any sound a user could utter, and so intent is clear.

To measure the occurrence of recovery devices, I counted each instance of text that fit into the above categories. To account for conversation length, I calculated two metrics: recovery devices per 100 lines and recovery devices per 100 utterances. I am making no hypotheses concerning recovery devices other than their existence.

With a corpus of transcripts thus established, the question remains to find

<u>Transcript</u>	<u>Lines</u>	<u>Utterances</u>	<u>Recovery Devices</u>	<u>Frequency</u>	<u>Lines per utterance</u>
N-group					
N1	360	281	47	16.7260	1.2811
N2	874	590	151	25.5932	1.4814
N3	390	273	112	41.0256	1.4286
N4	1629	1159	310	26.7472	1.4055
N5	796	567	63	11.1111	1.4039
N6	351	157	6	3.8217	2.2357
N7	377	254	51	20.0787	1.4843
N8	136	89	18	20.2247	1.5281
Average	614.13	421.25	94.75	20.6660	1.5311
Std. Dev.	478.01	347.20	99.11	11.1282	.02942
D-group					
D1	1305	892	160	17.9372	1.4630
D2	298	208	40	19.2308	1.4327
D3	515	245	53	21.6327	2.1020
D4	267	133	37	27.8195	2.0075
D5	796	416	59	14.1827	2.1020
Average	636.20	378.80	69.8	20.1606	1.8215
Std. Dev.	429.59	305.06	51.23	5.0589	.3434
All transcripts			Average	20.4716	1.6427
			Std. Dev.	8.9908	0.3338

Table 2. Data on the occurrence of the recovery devices in IM conversations. The "Frequency" column is given in recovery devices per 100 utterances.

Transcript	Lines	Utterances	Deviations	Frequency
<b>N-group</b>				
N1	360	281	10	3.5587
N2	874	590	30	5.0847
N3	390	273	11	4.0293
N4	1629	1159	49	4.2278
N5	796	567	19	3.3510
N6	351	157	4	2.5478
N7	377	254	4	1.5748
N8	136	89	1	1.1236
Average	614.13	421.25	16.00	3.1872
Std. Dev.	478.01	347.20	16.34	1.3535
<b>D-group</b>				
D1	1305	892	2	.0172
D2	298	208	1	.1613
D3	515	245	1	.0793
D4	267	133	1	.2816
D5	796	416	1	.2404
Average	636.20	378.80	1.20	.1560
Std. Dev.	429.59	305.06	.45	.1096

Table 3. Data on the disorderliness of IM conversations. The "Frequency" column is given in deviations per 100 utterances.

a way to measure its orderliness. I chose to do so by measuring the number of deviations from a perfectly ordered conversation (i.e. from the way FF conversations are generally ordered). A *deviation* is defined as when the topic of utterance *u'* is distinct from the topic of preceding utterance *u* and introduced without an appropriate discourse transition, including instances when user A is not aware that his interlocutor is typing and thus formulates his own utterance, so that user B's utterance seems off-topic. This definition also accounts for interlaced topics, which are also divergences from an ideal structure. For example, this excerpt contains one deviation (N6.7-11):

A (00:37:57): Ahem, well, yes, actually kinda since August 13th right?  
 B (00:37:57): how's life?  
 B (00:38:03): well, yeah  
 A (00:38:19): Well, now it become a bit more routine, I think.

It is thus possible to quantify the degree of disorderliness in an AIM transcript. I calculated two measures of disorganization: deviations per 100 lines, and deviations per 100 utterances. The more accurate metric is per utterance, since lines per utterance can vary. In terms of these variables, the hypothesis

is this:

$$\frac{[(\text{Deviations} / 100 \text{ lines})_{\text{DC-group}}]}{[(\text{Deviations} / 100 \text{ lines})_{\text{N-group}}]} <$$

### Discussion

It was very difficult to acquire a reasonable sample size for this experiment, due to the fact that I conducted it outside a laboratory setting, by simple solicitation (producing a response rate of about 5%). Thus the sample is not entirely random; I accepted transcripts from those who had them available and were willing. Beyond that, however, many AIM users do not readily save their conversations. This is probably because many AIM conversations seem to be menial events, concerned with common forms of information exchange. On the occasions when a user feels a conversation merits saving, the topic of said transcript is usually too personal to use in an experiment.

However, this data provides strong enough evidence to support my hypothesis: the difference in means between the two groups is statistically significant at the 1% level ( $p = .0027$ ), determined using a T-test:

$$t = \frac{M_D - (\mu_1 - \mu_2)}{\sigma_{M_D}}$$

with

$$H_0 : \mu_1 - \mu_2 = 0$$

In this case,  $t = 5.0078$ , and thus  $p = .0027$ , since there may only be a positive deviance frequency.

Thus, conversations using the Direct Connect feature are indeed more orderly than those without it. The integration of a recovery device into the interface of IM conversations reduces the deviations in those conversations.

Nevertheless, three transcripts remain in the N-group that are very ordered, one of which has only one deviation. This problem is more clear with recovery devices. This may be because both the use of recovery devices and the incidence of deviations depend on the personalities of the users and the topic of conversation. Just as there are extremely animated people who gesticulate in their FF conversation, there are IM users who will be more prone to the use of recovery devices. More importantly for the hypothesis, deviations appear to be dependent on topic. The most disordered conversation, N2, resembles a therapy session between A and B. At the same time, A and B apparently have not seen each other for a length of time, and so exchange a lot of peripheral information. In contrast, the most ordered N-group conversation, N8, is a simple information exchange. Any further experiments should attempt to control for these factors.

Throughout the N-group, disorderliness generally occurred in a form that can be described as "interlaced topics." Interlaced topics both produce deviations and are the result of deviations. Consider this passage (N4.187-207):

B (23:50:55): \*fakes damsel-in-distress-fainting\*  
 B (23:51:02): I would die  
 B (23:51:03): hahaha  
 A (23:51:10): the reason is that if we could, s'pore would become this whole parking lot coz there's limited sapce.  
 A (23:51:28): oh wait, that means I'll have to catch you coz u're fainting!  
 B (23:51:29): actually... im going in to get my liscence monday  
 A (23:51:33): hahaha



B (23:51:41): a little slow there,  
 B (23:51:55): ive probably hit the floor and bounced back up by now  
 A (23:52:04): Lucky!! not fair... but then I guess I can survive another year.  
 B (23:52:13): another year?  
 A (23:52:18): Luckily the floor makes you bounce!

B's first utterance is on the topic of fainting, and A's remark concerning the lack of space in Singapore is the first deviation, and introduces a new topic. The pair continue to discuss the two topics simultaneously and independently for several utterances beyond the excerpt. This is the definition of interlaced topics. This sequence begins with an initial deviation and then accumulates further deviations as it continues.

The many N-group deviations cluster around periods of interlaced topics. Once the interlaced topics are resolved (by exhaustion or evolution), then the conversation resumes conventional structure. Within the DC-group, all deviations were independent errors, which did not evolve into interlaced topics. It is not necessary to see the existence of interlaced topics as a detriment to IM conversation. DC's possible elimination of them might thus erase a feature unique to IM discourse.

Although Direct Connect does have an impact on the structure of conversation, it may thus do so at a cost. Without the knowledge provided by DC, a user has complete autonomy for taking turns; he cannot know if his typ-

ing overlaps with other typing, and so he will feel less restricted as to when he can type. As a corollary, users in a DC-IM might want to curtail the production of utterances when they see that their interlocutor is typing. Imagine, then, that the current topic was *t*, and user B wanted to propose topic *t'*. If B sees that user A is typing, he might be likely to cease typing until A's utterance appears on-screen (since DC does not provide access to the actual words being typed). If A continues on *t*, then B may decide to discard *t'* in favor of pursuing *t*. Thus the restriction of autonomy may sacrifice content, in the form of abandoned topics, for a more ordered structure.

It is possible to modify an IM interface to limit disorderly conversation without losing this form of autonomy. TO discourse has the advantage of permitting participants to manage multiple conversations much more effectively than FF discourse. Thus it is feasible to add a "Fork" button to the IM interface, which would split conversation X into conversations X and Y, simply by opening a new window. This would make explicit the process that allows interlaced topics in the N-group, by which users essentially carry on two conversations at once. A user hits the Fork button when he wants to split the conversation along topics *t* and *t'*. This would retain the unique interlacing character of IM conversations while minimizing incoherency.

The most important assumption in deriving the hypothesis is that in gener-

al, participants desire to return to face-to-face discourse. To verify the hypothesis is to provide an amount of justification for this assumption, in addition to the rationale already given. It is on this basis that recovery devices exist. As one user said (D1.1170-3):

B (2:08:07 AM): I try to make a point  
 B (2:08:16 AM): and since I can't through my voice or body language  
 B (2:08:21 AM): font is the only way.

The interesting aspect of Direct Connect is that the recovery device is integrated; that is to say, recovery devices still have their effect even when they are not explicitly used. Other forms of integration are possible. Emoticons are so prevalent that AIM designed a set of one-click faces that are actual stylized graphics instead of textual representations. But they still serve the same purpose, and add no extra information. There will eventually be full audio and visual integration, which raises the question: How much information can be integrated before TO discourse becomes pseudo-FF discourse? This, of course, following the recovery devices assumption, is the ultimate goal of on-line chatting.

Does the text-only phenomenon have any novel ideas to offer psycholinguistics other than verifying previous assumptions? Save the fact that on-line discourse may eventually replace both telephone and face-to-face discourse, the significance is unclear if enough recovery devices are integrated. It may

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# A New Approach to Alumni Legacy Policies in Admissions

*Thomas Loverro*

*A fair assessment of current Stanford admissions practices reveals an inconsistency. The use of legacy preference as an admissions criterion works in opposition not only to affirmative action, which Stanford is currently reaffirming and defending, but also the broader goals of universities toward improving society. Although many people feel very sensitive about raising the issue, we are irresponsible if we choose not to. We must question the very basis of legacy preference policies on both philosophical and practical grounds. If this is done carefully, I suggest that we are left little choice but to abandon them in favor of a more just and socially responsible admissions philosophy.*

## Introduction

**T**he practice of offering preference in university admissions to the children of alumni is an obvious, yet oft tolerated subversion of meritocracy. The contradiction is pronounced; the very gateway to achieving success in our liberal democratic, capitalist nation does not adhere to meritocratic principles. Yet, many venerable universities maintain legacy preference, such as Harvard, Yale, Princeton, and Stanford. Why do alumni legacy policies exist? Can they be satisfactorily justified?

This essay seeks to approach these issues by considering them from the viewpoints of the political theorist and university admissions officer. The contrasting perspectives between political philosophers and university employees complement each other well because they provide us with both the macroscopic view, from the level of an individual designing a society from the top down, and the microscopic view, from the level of an individual representing the particular interests of a university. Following from these two sections, the conclusion synthesizes the results and

suggests remedies to possible discrepancies between theory and practice. But, before progressing on to a theoretical examination of legacy practices in admissions, a historical outline is appropriate in providing a foundation for discussion.

## Brief History: The Birth of Legacy

Legacy policies are certainly not new features on the educational landscape. In the 1920s Harvard, Yale, and Princeton, among others, began offering preference to the children of alumni in order to counteract their rising numbers of Jewish and Catholic students and applicants (Megalli, 71; Lind, 170). Although blatant bigotry and anti-Semitism faded away, legacy policies persisted after the Second World War.

Today, legacy preference policies are not exclusive to the private Ivy League, but can also be found at large public universities such as the University of Virginia. Legacy admissions acceptance rates are typically much higher at schools with legacy

policies, anywhere from one and a half to four times the general acceptance rate. For instance, in the early 1990s Harvard's legacy acceptance rate was 35%, while the general acceptance rate was 16%. Dartmouth accepted well over half of alumni applicants at 57%, while the general acceptance rate was 27% (Megalli, 72). Today, Harvard's legacy acceptance rate is even higher than a decade ago at 40% versus a paltry 11% overall acceptance rate (Golden A1). A near four-fold discrepancy in admit rates cannot and should not be easily overlooked, especially considering that the available data suggests legacy applicants are generally less qualified in terms of SAT scores and GPAs! A report by the U.S. Department of Education's Office for Civil Rights found that legacy students at Harvard averaged 35 points lower SAT scores and also had weaker GPAs than non-legacies (Megalli, 71-73).

The most recent trend, however, has been away from the use of legacy preference in admissions. Led by state legislatures, schools such as the University of California, Berkeley and the University of Georgia no longer use

legacy preference in the admissions process. Senator John Edwards, a Democrat from North Carolina, has even incorporated an anti-legacy preference stance prominently into his bid for president.

## The Moral Philosophers

Before applying the theories of John Rawls and Robert Nozick to legacy policies, there is a fundamental question that should be addressed. Is political philosophy relevant to university admissions practices?

The answer is an unequivocal “yes.” John Rawls would undoubtedly agree. Although he does not specifically mention legacy preference, he comes very close by placing special emphasis on equal opportunity of education and social mobility. Social mobility and education are inextricably linked for Rawls since he controls nearly every other variable related to economic success, such as social class of families, talent, and even self-respect (Rawls, 54). The recent decision by the Supreme Court to rule on two cases regarding affirmative action at the University of Michigan exemplifies just how much weight our society places on higher education admissions.

### John Rawls

In *A Theory of Justice*, Rawls lays a strong theoretical framework against the use of restrictions like legacy in education or in the workplace. His famous thought experiment, the veil of ignorance, where a representative individual is asked to design a just society void of his or her partialities and particularities, aids us in hypothesizing the Rawlsian position on legacy preference policies. Rawls would almost certainly argue that it would be irrational to choose legacy as a criterion for university admission from behind the veil of ignorance, since in all likelihood, it would work against us rather than for us.

Rawls would justify his position by claiming that the two principles of justice would not permit an inequality, such as legacy preference, that is not to everyone’s advantage, especially at institutions as important to individuals and societies as universities. Rawls might compare legacy policies to the

aristocratic ideal, in his view an unacceptable social theory, in order to discredit them. On this topic, Rawls states, “The aristocratic ideal is applied to a system that is open, at least from a legal point of view, and the better situation of those favored by it is regarded as just only when less would be had by those below, if less were given to those above” (Rawls, 64). The situation Rawls describes in this statement closely resembles the legacy system. The university admissions process is a legally open system and legacy practices are often rationalized by the notion that fewer financial aid scholarships would be available for those “below” if legacy preference incentives did not exist for those “above.” The fit between legacy and Rawls’ description of the aristocratic ideal is undeniable.

Justice as fairness has important ramifications for the prospects and processes of social mobility. I would like to emphasize that he explicitly orders justice as fairness above efficiency (Rawls, 57-64). This is significant because it gives Rawls a powerful attack against supporters of legacy who might defend their stance on economic grounds, such as Robert Nozick. It implies that socioeconomic mobility should not only be theoretically possible, but practically possible as well. Applying this to university admissions, this should mean that students of the same ability and willingness have equal opportunities for admittance to universities. This is not the case today, however. One’s birth, that is, “initial place,” does affect prospects of success. For example, Stanford’s “Criteria for Undergraduate Admissions” explicitly states, “A few categories of applicants receive special consideration provided they meet the basic requirements of academic excellence and personal achievement....Children of Stanford graduates receive preference in choices among applications of approximately equal qualifications” (Fetter, *Questions and Admissions*, 9). In other words, children of Stanford graduates are *not* equal with applicants of “the same level of talent and ability.”

Delving further into this subject, Rawls states, “[Free choice of occupation] is achieved by policing the conduct of firms and private associations and by preventing the establishment of monopolistic restrictions and barriers to the more desirable positions” (Rawls,

243). If we assume Rawls would be opposed to legacy policies, this passage indicates he would extend the prohibition to private institutions in addition to public. It also suggests that he would make a point of ensuring that the “more desirable” institutions, in this case elite and/or private universities, such as the Ivys and Stanford, would not be above the law.

### Robert Nozick

Unlike Rawls’ interventionist state that constantly levels the social playing field, Nozick emphatically calls for the minimal state. The first line of his discussion on distributive justice, declares, “The minimal state is the most extensive state that can be justified. Any state more extensive violates people’s rights” (Nozick, 149). The implications of this short statement are profound for Nozick’s political and social theory. Justice is not based on ability or even fairness, but rather upon historical principles (Nozick, 154-160).

If we do not assume that justice demands society to be as meritocratic as possible, the very basis of Rawls’ theory is undercut. Nozick’s conception of justice relies upon his theory of entitlement and history, which asserts, if justice in acquisition of holdings and transfer of holdings are both in place, then no injustice occurred and there can be no justification for government interference. That is, if I make a dollar “fairly and squarely,” I should be able to keep it or bequeath it as I please *and* the government has no right to take it or any part of it away.

Nozick offers a couple pieces of evidence that suggest he would be in favor of allowing legacy policies. One, he criticizes Rawls’ difference principle as inappropriate “...as a governing principle even within a family of individuals who love one another” (Nozick, 167, footnote). This implies that private family values are important, even for government. Nozick might therefore defend the community and loyalty-building aspects of legacy. But is the university and families comparison appropriate? Universities are certainly communities, thus they have an interest in community-building, but they are *not* necessarily also families. Familial ties are based on love and are generally stronger than the bonds of even the

most intimate of communities. Although students may develop familial love with other students, one cannot accurately claim that students can share this same love with the institution of the university and vice versa. If these connections do not exist, are the “governing principles...within a family” even appropriate for universities? I fail to see any logical tie that binds the two. However, that does not mean Nozick and others cannot rightly believe universities *should* be governed like families. But, Nozick’s criticism of Rawls’ difference principle is reduced to a mere suggestion.

Two, Nozick stresses the significance of the right of an individual to give or bequeath. Legacy policies at universities, which are somewhat akin to inheritance practices within families, can reasonably be considered as falling under the logic of this argument. But, the strength of this argument depends entirely upon whether or not we accept the validity of his “communities as families” argument. If universities are not like families, then the right to give is severely limited.

## The University Admissions Officer

In seeking to develop a realistic and practical perspective to compare against Rawls and Nozick, I interviewed Jean Fetter, the Dean of Undergraduate Admissions at Stanford from 1984-1991 and Jonathon Reider, Senior Associate Director of Undergraduate Admissions at Stanford from 1985-2000. From the interviews, it became clear just how many different forces push and pull on admissions officers at any one time.

### Jean Fetter

Admission officers must make difficult decisions every day. The general admittance rate from the total applicant pool at Stanford was around 14%-15% during her time. Legacy admit rates at Stanford were about two to two and a half times the general admit rate (the percentages remain the same today), so fewer alumni children were being rejected as a percentage than non-legacies. Although it is impossible without much further study to show causation between legacy preference policies and

higher legacy acceptance rates, it should be noted, as stated earlier, the U.S. Department of Education’s Office for Civil Rights’ two-year investigation at Harvard discovered that legacy students averaged 35 points lower SAT scores and also had weaker GPAs than non-legacies (Megalli, 71). This information leads me to believe that legacy preference policies account for much, if not all, of the two-fold difference in acceptance rates between legacies and non-legacies.

When asked if legacy would be an appropriate criterion for admission/election/hiring in spheres of life outside of education, especially the ones generally considered to be meritocracies, Jean stated, “I think [education] is a special case. It is a formative time in your life...It imbues a different type of loyalty [than for-profit jobs]” (Fetter, Interview). This reasoning very closely resembles Nozick’s argument that policies should not be totally alien to family values. I find this sort of exceptionalism for justifying legacy at universities hard to accept. If family values, such as giving preference to relatives, is illegal in government, why should it be legal in universities admissions? It is not even accepted within universities when it comes to appointing professors! She also commented that Stanford’s position as both private and non-profit made a difference in her response, which also fits in with Nozick’s interpretation that private organizations enjoy certain privileges of non-interference from the state. This is a much more defensible argument because the “correct” amount of government-forced congruence between public and private organizations is anything but clear cut.

Despite presenting a number of justifications for legacy, Jean exhibited an unexpectedly high degree of caution on the matter. She identified specific instances where Stanford’s legacy policy came uncomfortably close to compromising the integrity of her position. She cited a specific example, stating, “One of my most agonizing decisions was when the chairman of the board of trustees had a grandson in the applicant pool and I couldn’t in good conscience admit him. His father was a Stanford alum—he was a legacy—and his grandfather was chairman of the board! That was really, really hard. It’s a slippery slope” (Fetter, Interview). Legacy poli-

cies are at the root of these dilemmas.

## Conclusion: Creative Resolutions

Discussions and debates in the popular media concerning legacy often fail because those who argue against legacy stay on philosophical grounds and those who argue for it remain on practical or economic grounds, without the two ever meeting in the middle to produce any meaningful compromise or synthesis. Part of this problem lies with legacy supporters who rarely use political or moral theory as a defense and thus feel a certain degree of moral unease with their position because they rely on purely economic reasoning, even though as I have shown through Nozick, it is possible to do so. However, I still have serious, unaddressed concerns with this moral viewpoint. I believe this unease is reflected by the unwillingness of many universities to publish any legacy statistics or justifications whatsoever, excepting the brute force of a government investigation. I experienced this first-hand while researching for this essay. Despite being a student, the current Stanford Admissions Office was clearly suspicious of my questions. Their reply came after a few hours (which were apparently used to consult with those higher up), but did not provide any new data. Fault also lies with the anti-legacy camps, however. They cannot expect to preach from moral high ground and be heard in terms of making real policy progress without at least addressing economic issues. Therefore, I will summarize the faults with both theory and practice and then propose a few measures to address this fissure.

As was demonstrated through the arguments of John Rawls, today there are still sound reasons for opposing legacy preference policies, such as preserving the ideals of meritocracy and allowing social mobility, which both serve to rejuvenate society. Nozick’s theory was shown possibly to support legacy preference because individuals and organizations should enjoy maximum protection from the intrusion of the state. But faults were found here. Equating organizations, such as governments and universities, with families was discovered to be speculative at best and deeply flawed at worst. In fact, I

believe that even the suggestion that governments and universities should be operated more like families is offensive to the progress of modern liberal democracies and would make some of the Founding Fathers, like Tom Paine, roll in their graves.

Additionally, economic motivations, such as those raised by Jean Fetter with her example of the chairman of the board's grandson, can potentially undermine the integrity of foundations of learning, which should serve as moral role models. Deans of admissions need to invent, incorporate, and constantly re-realize a coherent *moral* philosophy behind their policies. It is not enough to have a mission statement for admissions that is essentially "dead" and only be able to defend decisions with economic justifications.

There are also concrete measures I believe can be taken to address the issues presented by legacy policies. Economic pressures are often cited as a primary driver for legacy theories, yet

when I asked Jean and Jon if they were aware of any institutions having done a cost-benefit analysis on the topic, they both responded, "no." A good first step would be to determine whether the economic argument carries as much weight as many would hold. If such a study refuted the economic benefits of legacy policies, there would be little justification for most people, if any, for continuing legacy preference. Also, the Federal government should seek to work with universities to address any economic concerns over banning legacy in order to rectify the subversion of meritocracy that legacy policies cause. Carrots, or incentives, in the form of grants would probably have to be used in conjunction with sticks, or penalties, such as an outright prohibition or quota on legacy at public schools and the threat of funding loss for private universities to help overcome the collective action problems associated with a university unilaterally banning legacy and losing money relative to its peers.

After considering both sides of the debate on legacy admission preference policies, both my intellect and sentiment remain unconvinced by any pro-legacy arguments. It still offends me on a gut level and remains philosophically hard to accept. It appears to be an injustice that is propagated and explained exclusively by the same types of forces that have allowed so many other inequalities, such as aristocracy, sexism, and racism to persist: those in power do not like relinquishing it. More than any society in the past, America has shown the ability to overcome these stagnant and anti-progressive forces. With the right amount of publicity, social cooperation, and leadership on the part of concerned individuals and politicians, I am confident that legacy preference policies will one day be added to the long-list of injustices that seem exceptionally anti-democratic and anachronistic upon reflection. Perhaps, Stanford could help lead the charge.

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# Donatello and Ghiberti: The Choice Between Compositional Unity and Narrative Force

*Jason Rosensweig*

*This essay examines two artists at the vanguard of the artistic revolution of Quattrocento Florence, revered both by their contemporary artists and by our retrospective gaze: Lorenzo Ghiberti and Donatello. Ghiberti's Gates of Paradise and Donatello's San Lorenzo pulpits are two sets of sculptural reliefs created at the end of the artists' careers. They exemplify the active struggle and innovation of early Renaissance artists in their rendering of narratives and pictorial spaces. A comparison between these two capolavori can improve our understanding of how sculptural relief and Quattrocento art in general balanced these elements of representation. Ghiberti's compositions, on the one hand, represent formal harmony and aesthetic unity, while Donatello's represent narrative and expressive strength. Ghiberti subjugates narrative to aesthetic effect while Donatello subjugates compositional harmony to expressive effect.*

In the spiritual epicenter of Quattrocento<sup>1</sup> Florence April 2, 1452 marked the completion of the Baptistery of San Giovanni's<sup>2</sup> third set of bronze doors. The soon-thereafter-dubbed "Gates of Paradise" are essentially Lorenzo Ghiberti's final work<sup>3</sup>. Together with the North Doors of the same Baptistery completed several decades earlier, these East Doors comprise most of Ghiberti's life work. Fourteen years later, in 1466, Donatello died, leaving as his final work his own set of bronze reliefs. These reliefs were not a gilded announcement of Florentine civic accomplishment, visible 24 hours a day by all passersby. They were not over twenty years in the making, nor did they inspire lasting superlatives from Michelangelo<sup>4</sup>. But, like Ghiberti's doors<sup>5</sup>, the San Lorenzo pulpits challenge the representative and expressive potential not only of sculptural relief but of pictorial representation.

In a time in which the modern conception of the artist was only germinating, craftsmen, architects, painters, and sculptures lacked the clear separations between media of contemporary associations. Artists were simultaneously architects and builders; Ghiberti began as a goldsmith. In this fluidity of media<sup>6</sup> sculptural relief lay at an interesting—and prestigious—intersection between the three-dimensionality of sculpture and the two-dimensionality of painting.

From the 1420s through the greater part of the Quattrocento, Florentine artists proudly and relentlessly pressed the potential of their glorious invention, their revolution in pictorial representation: linear perspective<sup>7</sup>. Almost en masse, these artists trampled the barriers that had limited the realism of their creations. As realism in rendering increased, so did the narrative force of scenes now represented in real spaces. Artists from Massaccio to Fra Filippo Lippi to Donatello worked to balance

synthetic spaces and narrative to create the perfect composition.

In this essay, we will examine two artists at the vanguard of this artistic revolution, revered both by their contemporary artists and by our retrospective gaze: Lorenzo Ghiberti and Donatello. Ghiberti's *Gates of Paradise* and Donatello's San Lorenzo<sup>8</sup> pulpits are two sets of sculptural reliefs created at the end of the artists' careers. They exemplify the active struggle and innovation of early Renaissance artists in their rendering of narratives and pictorial spaces. A comparison between these two *capolavori*<sup>9</sup> can improve our understanding of how sculptural relief and Quattrocento art in general balanced these elements of representation<sup>10</sup>. Ghiberti's compositions, on the one hand, represent formal harmony and aesthetic unity, while Donatello's represent narrative and expressive strength. Ghiberti subjugates narrative to aesthetic effect while Donatello subjugates

compositional harmony to expressive effect.

## Ghiberti: composition and narrative

One way of approaching how Ghiberti deals with narrative and space is to examine one of the questions that strikes any art historian looking at the Gates of Paradise: what is the logic Ghiberti used in arranging and distributing the multiple *effetti*<sup>11</sup> in each of the ten<sup>12</sup> panels? At first glance, it is difficult to see any system behind the arrangement of the *effetti*. Each scene is not immediately or easily identifiable to one not extremely familiar with the Old Testament stories, nor do Ghiberti's panels offer any sense of the chronology or succession of events. Ghiberti relied on his Quattrocento Florentines to have a full and ready knowledge of the stories; his purpose, unlike that of the late-medieval mosaics lying just within his doors, was not didactic. Regardless, there should be a logic to the compositions—which scenes are foregrounded, which are larger, and which are in higher relief.

It is difficult, if not impossible, to find this desired narrative logic in the panels. One immediate example of this would be in the *Isaac* panel, where three superfluous women stand chatting, in almost full relief, in the front-center-left position. They are prominently sized and defined and occupy the privileged left-hand starting point for Western left-to-right readers. Another example of an explicably prioritized scene is in the *Joseph* (Figure 1). Joseph's sale to the Ishmaelites, perhaps the most dramatic moment in the story, is barely even in the panel; it hides in *schiacciato rilievo*<sup>13</sup>, in the far upper-right corner and outside the panel's primary (and monolithic) narrative space below.

John Pope-Hennessy, in an essay on the sixth centenary of Ghiberti's doors, addresses our problematic directly: "The purpose of the [Albertian perspective] scheme [for Ghiberti] is not the creation of a space illusion for the sake of space; it is the creation of a space illusion for the purposes of narrative lucidity" (Pope-Hennessy 52). Pope-Hennessy goes on to claim that Ghiberti uses a logical system of perspective to determine the degree of

relief and the degree of diminution for each figural grouping. Yet when applied to some of the unexplained aspects to Ghiberti's arrangements, Pope-Hennessy's explanation is not satisfactory. In the *Joseph* panel, one could argue that Ghiberti deliberately dampens the prominence of the *effetto* of Joseph's sale so that its potential for narrative energy does not interfere with the prominence of the *effetto* he wants to emphasize—the discovery of the golden cup. But can we use this reasoning to explain the aforementioned chatting women? Their high-relief prominence can only compete with the *effetto* directly beside it—Isaac giving instructions to Esau, which is clearly of greater narrative importance.

Richard Krautheimer's basic thesis is that Ghiberti sacrifices a logical hierarchy among the *effetti* for an overall aesthetic unity: "The demands of the composition prevail over the narrative" (195). This would explain the powerful architectural settings, like in the *Isaac*, the *Joseph*, and the *Solomon* (Figure 2) panels. The composition and the overall aesthetic dominate the panels, subjugating the content to lower hierarchical rungs. Even in a panel like the *Moses*, which lacks an overt architectural, perspective-driven construction of space, Krautheimer's thesis holds. The rocky hill, replacing an architectural frame, structures the panel and anchors the two figural groupings above and below. Here, the specificity of the narrative content drowns in the swarm of figures and *effetti* in the foreground. The one *effetto* that is easily identifiable and imbued with significant narrative force, the reception of the tablets, is pushed to the far top right; it is mere background information. Yet the force of the hill, the composition's fixed structure, is constant.

Krautheimer's claim is strengthened by his assertion that in the later pan-



Figure 1. Ghiberti, *Joseph*, San Giovanni.

els<sup>14</sup> Ghiberti strives "to eliminate the cleavage between narrative and composition" (197). The culminating exemplar of this would be the *Solomon* panel, which ceases to represent multiple *effetti* in one panel. Ghiberti tells only one story, that of the grand marriage between Solomon and the Queen of Sheba. Finally, "a unity of narrative and design, of time and space...has been established" (Ibid.). Implicit in Krautheimer's argument is the assertion that Ghiberti was conscious of the imperfect "unity" of the earlier panels. Krautheimer would thus have Ghiberti be aware that in order to achieve his desired aesthetic harmony, it was necessary to disrupt the narrative unity by combining *effetti* in illogical ways. Under this thesis, Ghiberti eventually solved this conflict in his final panel, where he discards the whole question of the distribution of multiple *effetti* in one panel. With only one story to relate, he



Figure 2. Ghiberti, *Solomon*, San Giovanni.

can bring compositional and narrative unity together.

This conception of Ghiberti's artistic design, that of placing compositional harmony and unity above content, is supported, albeit indirectly, by Charles Seymour Jr. In his book on Quattrocento sculpture, he produces diagrams of how Ghiberti arranges curvilinear shapes within the quatrefoil frames of the North Doors. He outlines symmetries, asymmetries, polygons, and opposing curves. Seymour uses these diagrams to develop his ideas on how Ghiberti leads the eye around the scenes, but his use of the diagrams relies on the assumption that Ghiberti first conceived of his panels formalistically. Thus Ghiberti's compositions were abstract forms *before* they became specific narrative designs. Consequently we can align Seymour with Krautheimer in seeing Ghiberti as prizing composition over content.

### Donatello: Freedom, dramatic energy, and space

That Donatello constructs his compositional spaces to focus the drama and psychological energy of his scenes is undisputed. Yet most art historians who make reference to this have other scholarly goals and preoccupations.<sup>15</sup> They take for granted the energy in Donatello's compositions while they pursue other areas of discourse. Given this, I hope that, with Ghiberti's panels as a foil, a discussion of several critical perspectives on Donatello, coupled with a few suggestions of my own, will prove illuminating. Just as I focused on Ghiberti's *Isaac*, *Joseph*, and *Solomon*, so will I focus on the following Donatello panels from San Lorenzo: *The Martyrdom of Saint Lawrence* (Figure 3) and *Christ before Pilate and Caiaphas* (Figure 4).

One fundamental problem<sup>16</sup> in dealing with the San Lorenzo pulpits, and perhaps part of the reason they have received somewhat limited scholarly attention, is that they were unfinished at Donatello's death in 1466. Giorgio Vasari, the great 16th century artist and "historian," is explicit about this, and indeed the chasing in many parts is markedly more crude than in others. In his monograph, *Donatello*, Pope-Hennessy devotes significant space to sorting out which panels are by

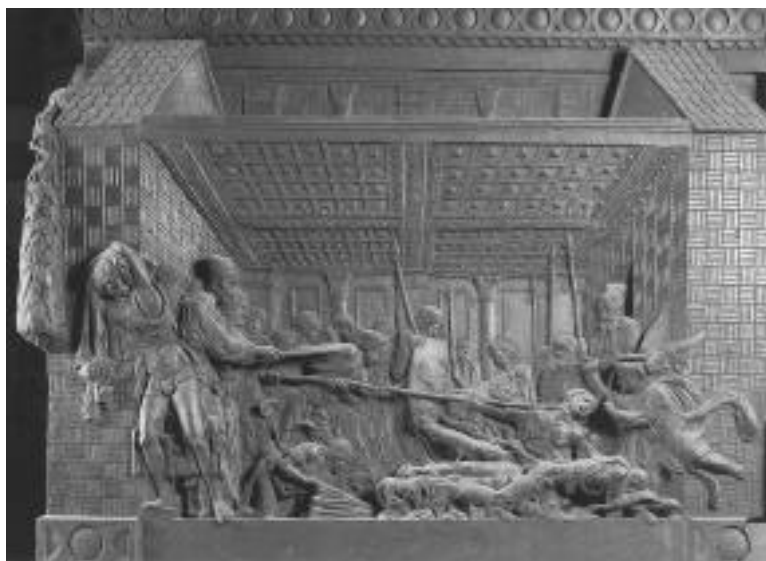


Figure 3. Donatello, *Martyrdom of St. Lawrence*, San Lorenzo.

Donatello, which by his assistant Bertoldo, which his other assistant Bellano, which were modeled by Donatello but cast by assistants, and which may have been cast by Donatello but chased by assistants. Bennett and Wilkins seem to operate under the assumption that Donatello is responsible for all of the reliefs, although, puzzlingly, they do explicitly note Vasari's reference to their incompleteness at the time of his death. Where Pope-Hennessy explains the "crudeness" of certain figures by refusing to attribute them to the master, Bennett and Wilkins assume the reliefs' authenticity in this respect. Bennett and Wilkins assume that Donatello intended the "crudeness," contrasting his style to "the consummate and careful craftsmanship so important to most fifteenth-century Florentine artists and patrons...[in which]; the forms are finely finished and the effect is of elegance and refinement..." To them, Donatello's harshness (rather than a function of his assistants' ineptitude) is a reaction to the "decorative, emotionally restrained work created by most of his contemporaries" (17)<sup>17</sup>. Even highly regular objects such as spears (recall Uccello's *Battle of San Romano*), in the *St. Lawrence* relief become coarse, irregular, and curvy. The world of a Donatello scene such as this is not ordered, harmonious, or constructed with exactitude and precision. Even the architectural elements are not composed of perfectly congruous shapes and lines. The individual lines, circles, and elements of the walls and ceiling are uneven, as if they

were sketched or as if the whole space was imbued with a kind of holistic vibration. The architecture, as we will see, is subordinate to the narrative, so as the dramatic energy of the scene resonates it disrupts the spatial structure and the visual fabric themselves.

Bennett and Wilkins see Donatello much the way I do, as someone for whom space compositions are not independent abstractions, but instruments for expressive strength. Their comparison of Donatello's *Miracle of the Repentant Son* in Padua with Ghiberti's *Miracle of the Strozzi Boy* for the tomb of St. Zenobius exemplifies their attitude: "Ghiberti's approach was to simplify and clarify; his search was for symmetries and harmonies. Donatello moved in the opposite direction, toward complication, contrast, and variety. Ghiberti chose to understand Zenobius's act as a dignified, solemn, and timeless occasion. For Donatello, Anthony's miracle was a dramatic, emotional event taking place in an atmosphere of charged excitement" (167).

We find the same "charged excitement" in San Lorenzo. In the *Deposition*, the "rigid body of Christ forms a stable horizontal and the seated Virgin provides a corresponding vertical" (Bennett and Wilkins, 15). In the *St. Lawrence*, the long, central branding-hook bisects the frame horizontally, in contrast to the vertical bisection created by the ceiling beam and the upright soldier.

In addition to the formal composition and its central bracing cross ele-





Figure 4. Donatello,  
*Christ before Pilate and Caiaphas*, San Lorenzo.

ment, the composition of the *St. Lawrence* sets up oppositions and juxtapositions between stasis and movement. In general, the figures are frozen, not mid-movement as in a candid snapshot, but as if posed. Bennett and Wilkins describe the effect as such that “an artist or his patron wished to stop all action, to put a pronounced emphasis on the emotion of grief” (16). Even the flames of the coals on which the saint will be martyred are powerful evocators of movement, yet the other martyr appears to lie still across the coals, without struggling.

Juxtaposed to these elements of stasis, there is a series of elements tied to movement and action. The angel at the far right, with graceful and billowing robes, contrasts sharply with the forcefully-paralyzed figures of St. Lawrence and his fellow martyr immediately adjacent. While the rest of the figures in the composition are frozen into the constructed space, two figures rupture that space: the angel on the right and the figure at the far left carrying away the saints clothes. A statically composed scene would not rupture its frame; only one whose action progresses oblivious to its formal constraints would disregard the formal limits set for it. How dutifully did Ghiberti observe the rules set by the quatrefoil frame in the North Doors<sup>18</sup>? Donatello’s juxtapositions of stasis and movements create a powerful, clenched tension. The central action, that of the executioner extending the branding hook, is

frozen at its apex: the hook has been extended in what must have been a powerful, decisive thrust. Then, that vertex of full extension is held in place, like a weightlifter squeezing and holding a repetition at the end of its range.

The *Christ Before Pilate and Caiaphas* panel contains the same narrative energy. In the *St. Lawrence*, there is a firmly constructed room that contains the action. But as we said before, even this belies its highly imperfect human construction. Furthermore, it is a simple, rectangular space. Donatello uses that space so loosely that the precise arrangement of the figures within that space remains somewhat unclear. In the *Pilate*, however, Donatello does employ a strong architectural structure, recalling the loggia<sup>19</sup> of Ghiberti’s *Isaac*. There is a front stage space, two monumental arches—where in the *Descent into Limbo*, *Resurrection*, *Ascension*, and *Pentecost* the arches we two-dimensional, drawn onto the background—plus spaces above on the balcony and further into the distance behind the metal grilles.

The chaos of the crowds of figures almost overpower the narrative. The seated Pilate on the left faces the seated Caiaphas on the right, both with a passive Christ standing before them. The swirling chaos of the composition is reminiscent of Greek vase paintings of the Amazonomachy, or of battle scenes of antique sarcophagi. Soldiers and onlookers literally flow up out of the ground and the sides, even spilling across the temporal barrier that should exist in between the two scenes. If we contrast this form of figural arrangement with those in Ghiberti’s *Solomon* or *Joseph*, we see the difference in his attitude toward architectural elements. In the *Solomon*, Ghiberti takes the architectural structure to an extreme, creating arches within arches in a Russian-doll like repetition, almost ad infinitum. The scene takes places almost entirely in front of the architecture, yet the architectural space continues well behind the action space. These almost superfluous spatial creations,

unrelated to the narrative, exemplify Ghiberti’s priority of composition. In Donatello’s *Pilate*, there are no superfluous spatial areas. Figures occupy each space that he creates, even the seemingly gratuitous balcony. In most of Ghiberti’s panels, *effetti* and figural groupings, even if they inhabit the same plane of space, as in the *Isaac* or *Joseph*, have spatial buffers between them<sup>20</sup>. The *David* and *Joshua* panels are the only panels in which there is a level of narrative and figural chaos comparable to Donatello’s *Pilate* panel. But even in those panels, the figures are almost all obediently vertical and are crowded *into* the panel, rather than bursting out of or *into* the panel, as in the *Pilate*.

Timothy Verdon breaks down the “spatial novelty” of the San Lorenzo pulpits into three categories: 1) The creation of real spatial depth, most prominent in the *Holy Women at the Sepulchre*, 2) The spillover of figures outside the frame, most prominent in the *Pilate* but also in the *Agony in the Garden* and the *Descent into Limbo*, and 3) The spillover of figures behind and into the frame, most prominent in the *Pilate*, the *Lamentation*, and the *Descent into Limbo*. Verdon attributes the origin of this “spatial novelty” to Donatello’s adaptation of theatrical scenes and special effects. Regardless of where Donatello drew his inspiration, he employs these devices to great effect. However, the theatrical parallel provides an interesting hypothesis for why Donatello would choose to depict such unorthodox moments in the Biblical stories, and with such unorthodox compositions<sup>21</sup>. Verdon offers a compelling lead, in his connecting the



Figure 5. Donatello,  
*Raising of Drusiana*, San Lorenzo.

composition of the *Ascension* scene, in which Christ's feet atypically touch the earthly ground, to the necessity of that moment's inclusion in a theatrical production. That is, in order to depict Christ's rising to heaven on stage, he would have to begin with his feet on the stage.

Similarly, choreographed theatrical scenes could reach the climaxes of harmonic arrangements that we see in panels like Ghiberti's *Solomon*. Yet theatrical scenes would have to include moments in their representation (unlike painting or other sculptural relief) where figures are half on stage and half off, or where the arrangement of the actors on stage is somewhat chaotic or evolving as they move toward their choreographed positions. Seeing such moments on stage could have provided the source for Donatello's chaotic imbued designs.

## Conclusion

In more than just his bronze reliefs, Donatello allows his narratives to drive his compositions. In his roundel of the *Ascension of John* in the Old Sacristy of San Lorenzo, the architectural forms are distorted, almost warped. They serve only as props to the miracle of the Ascension. The figures, and the architecture in which they stand, represent a disordered but nonetheless focused thrust up and further up, as John, with only his toes still resting on the house, lifts up into the sky. Similarly, in the *Raising of Drusiana* (Figure 5) in the same sacristy, the architectural space is somewhat unclear. The central arches are marked off from the side walls with a lighter sepia color, but it is actually not clear whether they lie in the very back of the architectural space, or

whether they bisect it, coming forward very close to Drusiana in the center. Either way, the architectural constructions and the surrounding figures in white encircle the central Drusiana in a sort of confused ring. Again they become props to the focusing of attention on narrative. In this case the only figure really relevant to the narrative expression is Drusiana, who is set off spatially and coloristically (with her highly contrasting black robes).

Ghiberti would not have tolerated the ambiguity of the architectural space in the *Drusiana*, or the distorted space in the *Ascension of John*. Drusiana, intensely isolated in black in the center of an otherwise markedly light composition, can serve as a fitting symbol of the degree to which Donatello moulds his composition to serve his narrative and expressive goals.

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### Notes

1. Italian term for the 15th century. [Ed.]
2. The Baptisery lies directly in front of the main doors of Florence's cathedral. [Ed.]
3. At least that which is extant. In the essay discussed below, by John Pope-Hennessy, he not only claims that Ghiberti's artistic production extends far beyond that which is extant, by that he produced many designs for works of art then executed by other artists.
4. It was Michelangelo's purported exclamation upon first seeing Ghiberti's second set of doors that led to their "Gates of Paradise" nomenclature.
5. I will refer to the Ghiberti's Doors with this shorthand. When referring to the North Doors, I will be explicit.
6. All were linked under the umbrella "muse" of *disegno* (design, or drawing) which was the base for all the arts and crafts.
7. Specifically, single-point linear perspective is a composition principle that solves the problem of representing a three-dimensional space on a two-dimensional surface plane. In linear perspectives, all "parallel" lines converge at a single point on the horizon; imagine the way the lines of a square-tiled floor pattern are slanted as they lead to a convergence point. The ceiling of Donatello's *Martyrdom of St. Lawrence* (Figure 3) provides a simplified example of this.
8. San Lorenzo is one of Florence's largest churches. It was the family church of the Medici, designed by Brunelleschi, and decorated by Lippi, Donatello, Bronzino, and others.
9. Italian term for "masterpieces." [Ed.]
10. In justification of this choice of comparison, I point the reader to several notes of history:
  - 1) Donatello is listed as working in Ghiberti's workshop around 1407 (Krautheimer 109)
  - 2) As early as the 1410s, Donatello and Ghiberti were sculpting competing monumental statuary for Orsanmichele: Donatello's *Saint Mark* (1411-1414) and *Saint George* (1417) and Ghiberti's *Saint John the Baptist* (1412-1416) and *Saint Matthew* (1419-1422).
  - 3) In the 1420s, when the city of Siena sought Florentine artists to contribute bronze relief panels for the new Baptismal font, it selected Ghiberti and Donatello.
  - 4) Even outside of sculpture, the two artists were competing. Both contributed stained-glass roundels for the Duomo: Ghiberti the *Assumption*, the *Presentation in the Temple*, the *Agony in the Garden*, and the *Resurrection* and Donatello the *Coronation of the Virgin*.
  - 5) They even shared a star pupil, Michelozzo, who passed from Ghiberti's workshop directly to Donatello's in 1424.
11. Italian term literally translated as "effect." In this context, it refers to the individual narrative episodes in Ghiberti's panels. [Ed.]
12. Really, this only applies to nine of the panels, as the *Solomon* contains only one *effetto*.
13. A technique, possibly invented by Donatello and first seen in the relief for the base of his Saint George, in which a sculptural relief is so low as to be almost no more than an etching.
14. Like much of Krautheimer's analyses, this depends on the accuracy of his chronology of the panels.

15. E.G. Pope-Hennessy's focus on the authenticity and authorship of the panels and parts of the panels or Verdon's focus on the influence of contemporary theatre on Donatello's composition style.
16. A second problem is that of the reliefs' origin and intention. Bennett and Wilkins and Pope-Hennessy accept the recent (1972) conclusions of Herzner that there was to be only one pulpit (now the right) and that the panels now on the left pulpit were intended for Cosimo II Vecchio's tomb. As we are dealing with issues of internal composition, and not with the rhetorical relationship between the panels and their function as a pulpit, nor with their rhetorical relationship to their specific location in San Lorenzo, the question of the intended function of the reliefs does not bear heavily on my analysis.
17. Under most hypotheses, the reliefs would have been at least modeled or designed by Donatello. Even if some of the panels were in fact completed by assistants, the composition of the scenes would not change, so I see no interference with my analysis. Furthermore, I am inclined to believe that Donatello, a sculptor able to produce such idiosyncratic sculptures as the wooden *Mary Magdalen* now in the Museo dell'Opera Del Duomo or the *St. Jerome* in Faenza, would be willing to take significant liberties, at the end of his career, in the San Lorenzo reliefs. The coarse modeling of figures like St. Lawrence or those in the *Agony in the Garden* seem well within Donatello's range. Furthermore, Donatello's Padua panels, like the *Miracle of the Repentant Son*, were certainly completed by him and use this rougher, course style.
18. See the *Resurrection*.
19. An open-aired gallery or arcade, usually composed of arches. [Ed.]
20. Recall the spatial buffer around Jesus, of which Goethe was so fond, in Leonardo's *Last Supper*.
21. Bennett and Wilkins note such choices as his emphasis of grief, as opposed to the more traditional joy, in the *Resurrection* (24-25).

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# The Effects of Cooling Core Body Temperature on Overall Strength Gains and Post-Exercise Recovery

*Adam Tenforde*

*Heat is the byproduct of metabolic reactions, with nearly 75% of energy created released as heat. This paper evaluates two studies investigating the effects of cooling core body temperature on overall strength gains and post-exercise recovery. The first study evaluates the effectiveness of cooling before, during and post-exercise on performance and recovery. Results show that lowering core body temperature results in lower overall relative oxygen consumption during prolonged exercise. The second study evaluated the effects of intermittent cooling between bouts of maximal exercise and different conditions of post-exercise conditions of cooling. Results show that a majority of subjects improve on treatment, supporting the theory that temperature is a limiting factor of exercise though responses to cooling treatments are individualistic.*

## Introduction

Previous studies have demonstrated that elevated temperature can be a source of fatigue. During exercise metabolism, core body temperature, metabolite buildup, and muscle efficiency are significantly affected by elevated core body temperature. Circulation issues related to heat exist in two forms: dehydration and blood redistribution. One main cause of dehydration is loss of fluids through increased sweating in response to demands for greater cooling. Dehydration decreases blood and plasma volume, rate of sweating, muscle strength and capacity, as well as liver glycogen. In addition as the body temperature rises, more blood is shunted to peripheral tissues to aid in cooling and

less oxygenated blood is available for muscle tissues, the lungs, heart and other internal organs and tissues. Therefore, there is a direct relationship between exercise performance and esophageal temperature during exercise [12]. Therefore rises in core body temperature will limit performance in cases of prolonged or hypothermic exercise conditions.

There is also a centrally mediated component of fatigue related to heat exposure. A study by Nybo et al. demonstrated that heat-related fatigue was related to changes in cerebral activity [13]. These results demonstrate that there is altered brain activity associated with hyperthermia-induced fatigue, although the actual mechanism was not found [13]. Therefore, it appears that there exists a threshold core tempera-

ture of 40°C that limits individuals from performing exercise controlled by the central nervous system.

The balance of substrate use may also change as a result of elevated core body temperature, resulting in a decrement of exercise performance. A study by Jentjens et al. demonstrated that more muscle glycogen and less ingested carbohydrates are utilized during submaximal exercise in a heated environment compared to a cooler environment [7]. Prolonged exercise with a corresponding increase in core temperature could lead to substrate-related fatigue.

Metabolic byproducts can have limiting impacts on performance. Elevated temperature compromises the release and uptake of  $\text{Ca}^{2+}$  in muscles outside of optimal temperatures [1, 8, 9]. Since  $\text{Ca}^{2+}$  is important in muscle

contractions, changes in  $\text{Ca}^{2+}$  uptake can inhibit normal muscle function.

In addition, inorganic phosphate ( $\text{P}_i$ ) can have a negative impact on muscle function, as  $\text{P}_i$  interferes with  $\text{Ca}^{2+}$  [1, 10]. There is a greater level of metabolites as a result of circulation issues at higher temperatures. Oxygen supply to exercising muscles can become compromised at elevated temperatures, impacting the release of  $\text{Ca}^{2+}$  as well as changing the composition of metabolites present during physical exertion of muscle groups [6]. Therefore, one possible mechanism of fatigue at the muscle level could be elevated temperatures impacting metabolite buildup and the function of muscles [10].

## Purpose and Hypothesis

The purpose of this study was to determine the benefits of cooling on muscle performance. The hypothesis on which this project was based is that one factor producing muscle fatigue is a rise in temperature of the muscles and core body region. Therefore, intermittent cooling during exercise should lead to a greater increase in maximum power output. With small time intervals between sets of maximum exertion, use of this thermoregulation device should result in significantly lower core temperature during exercise. Lowering core temperature of subjects before exercise should increase performance by limiting central fatigue [13]. In addition, application of cooling after exercise should impact recovery rate by reduction in metabolites related to heat. Dehydration effects and substrate utilization can be optimized at lower body temperatures. The factors monitored during exercise that would indicate improvement in performance due to cooling include metabolic gases, lower lactate concentrations and heart rate, and rate of perceived exertion (RPE).

## Materials and Methods

### Sub-maximal Exertion Running Study

Seven endurance-based male running subjects in aerobic base training phase were recruited to participate in this study. Two forty-minute bout of

sub-maximal running trials were performed at the Sports Medicine Institute International Physiology Laboratory. Subjects were counterbalanced into two groups.

Initially, subjects performed a  $\text{VO}_2$  max test designed by Dr. Jack Daniels. Baselines of esophageal ( $T_{\text{es}}$ ) and tympanic ( $T_{\text{tym}}$ ) temperature as well as heart rate measurements were taken prior to beginning exercise.

Subjects were given twenty minutes of active warm-up followed by stretching. During the pre-cooling trial, subjects stretched in a room kept at hyperthermic temperatures ( $31.3 \pm 0.7^\circ\text{C}$ ). The application of heat lowered  $T_{\text{es}}$  by an average of  $1.2 \pm 0.4^\circ\text{C}$ .

During each trial subjects performed a sub-maximal exercise set at 82-87% of their  $\text{VO}_{2\text{max}}$ . Data collected included  $\text{VO}_2$  data, respiratory exchange ratio (RER), and fingertip blood lactate samples (YSI 9000 lactate analyzer) at 10-minute intervals during the 40-minute exercise bout. These measurements were additionally taken 10-15 minutes immediately following the conclusion of the sub-maximal exertion. Heart rate and RPE values were obtained at five-minute intervals during exercise.

### Temperature and Heart Rate Measurements

The subject's esophageal and ear canal temperatures were sampled at 1 sec intervals using thermocouple temperature probes positioned at the approximate level of the heart. The tip of the ear canal temperature probes were self-inserted and fastened to the outer ear. Both temperature measurements were taken using a temperature data recorder recording at one-second intervals.

The heart rate measurements were obtained by use of the Polar heart rate monitor. The heart rate device used a chest strap that positioned it directly above the xyphoid process. Heart rate values were recorded within five seconds immediately preceding each measurement interval.

### Cooling Mechanism

The Rapid Thermal Exchange device designed by H. Craig Heller and DA Grahn at Stanford University and

produced by AVACORE (RTX Rapid Thermal Exchange System) has been shown to effectively manipulate core temperature [4, 15]. The body core releases excess heat through areas consisting of arteriovenous anastomoses (AVA's) and the subcutaneous venous plexuses found on hairless regions of the body consisting of the hands, feet, face and ears [4]. These specialized vessels constrict and dilate as a response to higher and lower core temperatures, respectively [2, 4, 5, 11, 15]. The result is a change in the venous temperature of the blood returning to the heart, impacting the core temperature. This device creates a thermal gradient using a water-perfused matrix underlying a metal plate that is designed for the curvature of the palm of the hand. The temperature of the water bath can be manipulated to create the desired thermal gradient. In addition, the metal plate is enclosed in a plastic cover with a pressure-cuff designed to create a vacuum around the wrist of the hand set at 15 to 25 in  $\text{H}_2\text{O}$  below atmospheric pressure, allowing a greater volume of blood to enter the hand for heat exchange and, in addition, may prevent constriction of the AVA's to maximize heat exchange with the thermal gradient underlying the palm of the subjects' hands.

### Post-Cooling Procedure

At the conclusion of the forty-minute exercise bout, subjects were randomly assigned to receive cooling during one of the two post exercise periods, using the AVACore device set to  $22^\circ\text{C}$ . During the recovery period, temperature and  $\text{VO}_2$  data was continuously collected with a blood lactate sample at conclusion of exercise.

### Data Analysis

The data was collected from each subject and averages for each time period as well as for the entire test were created. Comparisons between each time period between subjects were conducted using a one-sided paired t-test with the significance level set at  $p < 0.05$ .

### Cyclist Study

Ten healthy, well-trained experienced male cyclists in the racing phase

of their season were recruited to participate in this study. On two separate occasions, cyclists performed eight sprints of 0.2 miles in length at the Sport Medicine Institute International Physiology Laboratory at 23°C. Subjects were counterbalanced to perform two sessions of eight time trials to exhaustion with three minutes of passive recovery between sprints. During the intermittent cooling trial, subjects received cooling using AVACore Rapid Thermal Exchange (set at 26°C) during the duration of the three-minute recovery period.

Before beginning exercise, esophageal ( $T_{es}$ ) and tympanic ( $T_{ty}$ ) temperature and heart rate measurements were recorded. Subjects mounted the cycle ergometer and were given a ten-minute warm-up prior to beginning each trial. Each cyclist used his own bicycle fastened in a stationary position equilibrated to ensure accurate measurements.

Computrainer software (RacerMate CompuTrainer 3D Software) provided readings of the total time to complete each trial, as well as data on the maximum wattage, average wattage, maximum speed and average speed. Data collected included  $VO_2$  data, RER, respiratory metabolic information as well as lactate measurements taken throughout the duration of the eight sprints. Measurements were continued for ten to fifteen minutes during passive recovery immediately following the eighth sprint to monitor recovery.

## Results

### Sub-maximal Exertion Running Study

Six of the seven subjects were used in the analysis of the data. One subject was excluded for heat illness during both trials. Temperature data is presented in Figure 1. Subjects experienced an initial drop in the starting temperature of the pre-heat experiment compared to control conditions (37.00°C versus 37.72°C,  $p < 0.05$ ) although the average temperature reached at the conclusion of trials was similar (38.44°C to 38.56°C).

The results of each performance measure are listed in Table 1. Although the respiratory exchange ratios (RER)

showed no differences between pre-heating and control trials (0.895 versus 0.896), the average  $VO_2$  values for pre-heating were significantly lower than the control condition (53.7 versus 55.0 mL  $O_2$ /kg,  $p < 0.01$ ). The rate of perceived exertion (RPE) values were on average lower for the pre-heating trial compared to the control trial (12.92 versus 13.28) but failed to reach statistical significance ( $p = 0.13$ ).

The average blood lactate levels between cooling and control trials showed no major differences (3.46 versus 3.60) although the rate of increase of blood lactate accumulation was less than half as rapid for the pre-heating trial compared to the control trial (0.0308 versus 0.0644, Figure 2). No significant trends were observed in average heart rate trends between the pre-heating and control trial (162.3 versus 161.2 bpm).

The post-cooling results are in Figure 3. There was no significant trend over the 3-minute time intervals of RER with and without cooling, although the RER value at the 12 minute time interval was significantly lower ( $p < 0.05$ ) than the control.

### Cyclist Study

Seven of ten subjects were used in the analysis of data. Three subjects were excluded for non-compliance to the protocol. The remaining subjects were divided into responders ( $n = 5$ ) and non-responders ( $n = 2$ ) (Figure 4). The responders ( $n = 5$ ) had consistently lower core temperature throughout the duration of the experiment (38.29°C versus 38.56°C,  $p < 0.01$ , Figure 5). A second criterion for being labeled a responder was an increase in performance measures (time to trial completion, average and maximum wattage performed) during the cooling trial. One subject was placed in the responder group after only meeting the second condition, although he had no change in  $T_{es}$  temperature. The non-responder group ( $n = 2$ ) was composed of subjects who displayed a decrement in performance, measured in the time to complete each trial, the average wattage per trial, and the maximum wattage performed per trial, although their temperature was higher for the control condition for the duration of the experiment (Figure 6).

The results of each performance measure are summarized in Table 2. The responders displayed a lower average time over the eight trials (32.98 versus 33.71 seconds,  $p < 0.05$ ), a higher average wattage output (426.0 versus 404.7 watts,  $p < 0.05$ ), and a higher maximum wattage output (678.4 versus 648.2 watts,  $p < 0.01$ ). The non-responder group had decrements in performance during the cooling trial compared to the control condition, with higher average time trial values (34.58 versus 34.34 seconds), lower average wattage output (383.3 versus 386.9 watts), and lower maximum wattage output (520.1 versus 536.1 watts). Upon comparison between trials, none of the three performance measurements in the control group reached a significance level of  $p < 0.05$ .

Associated with performance, lactate and heart rate measurements were also compared between and within groups. The average lactate values of the responder group were lower during the cooling trial (16.15 versus 17.52,  $p < 0.05$ , Figure 7). The non-responder group had higher average lactate values during cooling (12.45 versus 10.82,  $p < 0.01$ ) as well as had higher lactate values recorded at the end of each of the eight trials during cooling versus control (Figure 8). The heart rate values for both groups demonstrated no significant trends for either responders (169.3 versus 168.2 bpm) or non-responders (157.8 versus 159.2 bpm) between cooling and control trials, respectively. The cooling and control values of each subject were collected together and are presented in Figure 8. The RER values for cooling on three-minute intervals were significantly lower for cooling over control at  $p < 0.05$  levels. The post-exercise temperatures were also significantly lower for cooling over control, with the 3, 6, 9, and 12-minute interval values for temperature at a  $p < 0.01$  level and the 15-minute interval value at a  $p < 0.05$  level (Figure 9).

## Discussion

### Sub-maximal Exertion Running Study

The results suggest that pre-heating may have slight performance-enhanc-

ing benefits. The  $\text{VO}_2$  values were lower for the pre-heating trial although the same pace was maintained for both trials. In addition, the higher rates of rise of lactate for the control trials compared to the preheating condition suggests that the body was more efficient at managing metabolite accumulation in the pre-heating condition. Lower RPE values were consistent with results that suggest pre-heat trials perceived an easier workload, although not reaching statistical significance. These three findings support the theory that temperature manipulation can improve performance.

Although the subjects entered a hot room for the pre-heating trial, the temperature measurements suggest that the subjects experienced a drop in  $T_{\text{es}}$  of  $1.2 \pm 0.4^\circ\text{C}$ . One potential reason for a lowering of core temperature monitored as a result of the body redistributing heat in the body to the periphery in order to exchange heat and avoid a future rise in core temperature. A second reason for the observed decrease in may be due to recording failure of the OMNI-3000 device at higher ambient temperatures.

A second reason for the increase in performance for preheated subjects may be due to the impacts of pre-heating as aiding in pre-exercise warm-ups. After concluding a 20-minute warm-up on the treadmill, subjects in both the pre-heated and control conditions maintained a relatively static position. As a result, subjects may not have been able to perform an adequate warm-up routine and may have been aided by the warmer environment to prepare the muscles for the 40-minute pre-exercise bout.

Finally, the subjects in the control were given a placebo 'cooling' by placing one hand in the AVACore device set at  $12^\circ\text{C}$ . The thermal gradient created by this setting resulted in relatively no change in  $T_{\text{es}}$  over the duration of the 15-minute period between the warm-up and sub-maximal exercise bout. One possible explanation for this observation is that the temperature was set low deliberately to cause a local vasoconstriction for subjects in order to maintain a higher core temperature. As a result, the normal vaso-regulatory mechanisms in the periphery may have

been activated and led to general peripheral constriction that may have lasted through the beginning of exercise, resulting in less efficient heat exchange for the control subjects and less effective mechanisms to deal with metabolites, as evidenced by the higher rate of lactate accumulation in control conditions.

Post-exercise cooling appears to have no effect for sub-maximal exercise, as evidenced by Figure 3. The lack of change in RER values is not surprising, as the subjects were working at a sub-maximal exercise level and therefore did not generate significant levels of metabolites or disturb the acid-base balance of the individual. Without changes in either metabolism or acid-base balance, it is not surprising to note no effects of cooling on RER values.

### Cycling Study

Based on the results of the responder group, it appears that cooling is an effective means to increase performance in maximal exertion exercises, as the cooling trials for the responder group resulted in faster time trials, as well as higher average and maximum wattage compared to control conditions. The lactate and heart rate values do not give any additional support for cooling as a performance enhancer, though there may be reasons behind these findings. Lactate is an expected result of anaerobic work, and therefore should be high in both cooling and control environments, regardless of cooling. In addition, heart rate should be elevated in both trials. The results seem to be consistent to a theory of a central mechanism of fatigue related to elevated temperatures [21, 22].

Although the subjects in the control group exhibited higher  $T_{\text{es}}$  during the control trials over the cooling trials, the difference between the first and eight trials was  $0.60^\circ\text{C}$  for cooling and  $0.48^\circ\text{C}$  for control (Figure 6). This suggests that although the non-responders had lower  $T_{\text{es}}$  values for the duration of the study, the temperature was rising at a faster rate for the cooling trial. This trend was not observed in the responder group, as the responder group had a net increase of  $0.08^\circ\text{C}$  for cooling com-

pared to  $0.32^\circ\text{C}$  for control.

The difference in responses between individuals deserves mentioning. A few different reasons may account for the division of the seven individuals into two group responses. The two subjects in the non-responder group did not show improvements between the control and cooling trials, as observed by a consistently lower average and maximum wattage compared with the responder group for both cooling (383.4 versus 426.0 watts; 678.4 versus 520.1 watts) and control periods (386.9 versus 426.0 watts; 536.1 versus 648.2 watts) for average and maximum wattage, respectively. These values suggest that the composition of groups may have been divided into power athletes tending to fit into the responder group and the non-responders being more endurance-oriented. In addition, the non-responders were unable to generate the same lactate levels that would further support this finding.

One other interesting finding was the effects of post-exercise cooling on the RER values of individuals. Over the fifteen-minute post-exercise period, the RER values were significantly lower for individuals during cooling ( $0.97$  versus  $1.03$ ,  $p < 0.01$ ). Interesting to note that the  $T_{\text{es}}$  values for subjects were also suppressed during the post-exercise cooling bout ( $37.83^\circ\text{C}$  versus  $38.05^\circ\text{C}$ ,  $p < 0.01$ ), suggesting that temperature was a causal link in changing the RER values. These preliminary findings suggest that cooling could have an impact on recovery following maximal exercise.

Future research needs to be conducted to determine if the RER differences are due to a change in the post-exercise metabolism of individuals, acid-base balance, or the rate of respiration. In addition, future research needs to address the performance discrepancy between individuals during maximal exercise bouts. Possible areas to consider include developing better procedures and methods to find the constriction threshold for each individual and setting an appropriate temperature gradient to optimize heat exchange.

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# White Heat: Purity and Passion in *Queen Anne's Lace*

**Becca Hall**

*In William Carlos Williams's poem "Queen Anne's Lace," the author addresses the tensions between purity and passion. The poem describes an erotic experience and the effect an unnamed man's touch has on the purity of an unnamed woman's body. Using the colors white and purple as symbolic representations of purity and passion, Williams simultaneously constructs a duality and a codependence between them. There are two conflicting, but integral, readings of the poem. The first implies that passion subsumes purity, the second that the two depend upon each other for existence. To resolve the contradictions between the readings would be to ignore the depth of the poem, as both are essential to the meaning of the poem.*

## Queen Anne's Lace

*Her body is not so white as  
anemone petals nor so smooth—nor  
so remote a thing. It is a field  
of the wild carrot taking  
the field by force; the grass  
does not raise above it.  
Here is no question of whiteness,  
white as can be, with a purple mole  
at the center of each flower.  
Each flower is a hand's span  
of her whiteness. Wherever  
his hand has lain there is  
a tiny purple blemish. Each part  
is a blossom under his touch  
to which the fibres of her being  
stem one by one, each to its end,  
until the whole field is a  
white desire, empty, a single stem,  
a cluster, flower by flower,  
a pious wish to whiteness gone over—  
or nothing.*

— William Carlos Williams, 1925

**R**ich in metaphor, simple in language, mystifying in meaning—William Carlos Williams's poem "Queen Anne's Lace" dazzles with its depth. It toys with the conflict between the seemingly mutually exclusive qualities of purity and passion, symbolized by the colors white and purple. It simulta-

neously sets them against each other, and shows how fluid and interconnected the two can be, offering two concurrent and valid readings. To resolve the ambiguities in the poem would mean to choose one reading over another, and therefore to ignore half of the meaning in the poem. "Queen Anne's Lace" finds its depth through the unresolved tension between its contradictory meanings and readings. To understand the poem fully, the contradictions must be accepted and not oversimplified.

"Queen Anne's Lace" uses the metaphors of flowers to describe an erotic experience. It describes an unnamed woman's body and the way it changes as a result of the touch of an unnamed man. The poem divides easily into three conceptual sections, separated by the only non-enjambed lines of the poem. The first section depicts the woman's body using a negative definition—saying what she is not. The second section begins to say what she actually is, while the third details the effect the erotic experience with the man has on her body. Each of the section breaks fall at a shift in focus, going from a relatively simple polarization between Queen Anne's Lace (symbolizing the woman's body) and anemone flowers, to a climactic, alchemical confusion. The poem uses the symbolic concepts of whiteness and purpleness to illustrate this process.

The colors white and purple hold nearly opposite connotations. White symbolizes purity, innocence, virginity, light, harmlessness, goodness and also emptiness. It has the connotations of being unstained and free from lust and passion. Purple, on the other hand, has much earthier associations. The color worn by royalty, it also symbolizes mourning, blood, and sin. It is bright and gaudy, and anything but pure. Symbolically, purple and white appear to be mutually exclusive. One cannot be both unstained and bloody, pure and sinful, or so the societally sanctioned definitions imply.

This dualism means that the more the woman in the poem is purple, the less she is white. Each "tiny purple blemish" (13) that the man's touch causes diminishes her purity. "Blemish" is defined as a "defect or flaw; stain; blight," so by definition these blemishes detract from her unstained quality. According to the dualistic symbolism that Williams employs, the woman's whiteness should gradually be overcome by purple as the poem progresses through the erotic experience it describes.

Oddly enough, the rest of the poem does not completely support this hypothesis. The woman in the poem is somehow simultaneously white and purple. Her whiteness and her purpleness intertwine and actually depend on

each other. Each purple blemish is the center of a white flower—the more blemishes, the more flowers. Her whiteness grows with his touch, until—in a climactic ending—everything becomes “a pious wish to whiteness” (20). The erotic experience related in the poem culminates in whiteness. In other words, whatever is being symbolized by her whiteness is not actually in opposition to her purpleness, and may in fact depend on it. Yet still that is too simple, as the poem actually ends in nothingness, suggesting that despite all the apparent collaboration between white and purple, they may in fact ultimately destroy each other.

The ambiguity surrounding whiteness continues throughout the poem, raising many questions. For example, what exactly does “white desire” (18) mean? White could be modifying desire. In this case it carries associations of spotlessness and purity, implying that passionate desire is not sinful. Also, it brings to mind white heat and blinding light—the searing white that can dissolve boundaries, much like erotic experiences do. Yet the phrase could conversely mean the desire *for* whiteness. It could be a wish for the purity lost through the purpling touch. While these two interpretations themselves conflict, in the context of a poem one need not be chosen over the other. In fact, the poem derives energy and depth from the tension between these opposites.

The two conflicting readings—one ending nihilistically, the other synergistically—carry through the entire poem. In the first reading, the woman’s sexual experience threatens her whiteness with purple blemishes. Although she is as “white as can be” (8), her whiteness is marred by the man’s touch—“Wherever/his hand has lain there is/a tiny purple blemish” (11). In this light, the poem could be about loss of innocence and purity—perhaps the loss of virginity. The man’s touch gradually divides the woman’s body’s white purity into “hand’s span’s” (10), each with its purple spot. As the poem progresses, her whiteness is subsumed by the purple. Read this way, the line “a pious wish to whiteness gone over” (20) implies a wish for lost whiteness. As the

line “white desire” (18) can also be read as meaning a desire for lost whiteness, one could argue a strong case for this reading.

This perspective gives the poem a note of sadness and regret. It almost feels hopeless, ending as it does in a fruitless wish and then nothingness. The violent tinge in the descriptions of the “tiny purple blemish” (13) caused by each touch of the man’s hand adds to this depressing tone. The images of the purple blemishes seem to both suggest that the woman’s moral “whiteness” is stained and that her body is physically blemished by the touch. It seems almost to be a description of rape. At the very least the lines hold an element of destruction and forcefulness. The violence in the image of the purple blemishes left by his hands echoes the violence in the description of the woman as “a field/of the wild carrot taking/the field by force” (3). The difference between the two is that in one the roughness lies within her, while in the other, it lies in the treatment of her. Both kinds of roughness contrast the delicacy of the anemone, underscoring the difference between this woman and the delicate, pure ideal. Both could be read as sad symbols of how damaged the woman’s “whiteness” is.

However, this is not a complete reading of what the poem is saying. Even though the woman differs from the ideal, being “not so white as/anemone petals nor so smooth—nor/so remote a thing” (1) she is still white. She may be a “field/of the wild carrot taking/the field by force” (3)—rough and strong and earthy—but she is still white. She is “white as can be” (8), in fact—the epitome of whiteness. So it is not in the amount of whiteness that the difference between the woman and the ideal lies, but in the quality of the whiteness, or, perhaps, the expression of whiteness.

Hers is a complicated whiteness. The woman is not just “white as can be,” but “white as can be, with a purple mole/at the center of each flower” (8). She embodies both white and purple, holding this apparent contradiction in her very essence. And perhaps this is no contradiction—certainly the second reading of the poem would assert that.

If each purple spot grows in the center of a white flower, then the more purple there is, the more white there is. The two depend upon each other.

In this case, “white desire” (18) means sexual desire that has the qualities of whiteness. Whiteness—i.e. purity—does not oppose sexuality. Even the climax can be read as a dissolution into whiteness. The “pious wish to whiteness” (20) is an ecstatic wish for what is already made real, not a regretful wishing for what has been lost through the expression of sexuality. Williams has twisted the polarity between passion and purity to the point where the greatest moment of purity corresponds with the greatest moment of passion. He has redefined purity. One can be earthy, strong, physical, rough, and sexual and still be pure. In fact, this purity comes about *because* of sexuality – the white flowers multiply along with the touch-caused purple spots. In this reading, the erotic experience dissolves the assumed oppositions, transforming everything into something else—perhaps even into nothing.

In the end, the reader is left with a choice: does the erotic experience bring about a positive transformation, synergistically converting disparate opposites into co-operative forces; or does it cause destruction, and ultimate dissolution into nothingness? The end of the poem presents both options openly, and leaves the dilemma unsettled. Yet perhaps both options can coexist. Perhaps everything can also be nothing, building can also be destroying, passion can also be purity. The very fact that both options are presented means that both exist within the world of the poem. One option need not be right. The challenge for the reader, then, is to bear the tension between these seemingly opposing scenarios without denying the existence of either. It is to develop what Keats called “negative capability”—the ability to live with conflict and mystery without needing to come quickly to a resolution. In this way, the meaning and wisdom of both readings can play upon the reader’s mind, and the poem—like the real world—does not need to be diminished or simplified in order to be fully experienced.

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*Webster’s New Universal Dictionary.*



# Researching Beyond Stanford: A follow-up interview with Michael Osofsky

*Devarati Mitra*

As the *Stanford Undergraduate Research Journal* enters its second year of publication, the editorial staff have become curious about how some of last year's authors are doing. Although producing a publishable paper is quite a feat, it is not necessarily a culmination of their research endeavors: most of the researchers from last year's journal are currently hard at work furthering their studies. Of particular note is Michael Osofsky, who published a paper titled, "The Psychological Experience of Security Officers Who Work With Executions." In his paper, he discussed his results from interviewing 124 correctional officers affiliated with the death row and found that "participants in the execution process stress 'caring professionalism'," and even though they act with respect and decency, they "frequently have a hard time carrying out society's 'ultimate punishment.'"

Following publication, Osofsky extended his research from Louisiana and Alabama to a third state, Mississippi, and after conducting upwards of another hundred interviews, has completed the most extensive study ever conducted in this area. Osofsky states that although results continue "to show the two-fold conclusion of 'caring professionalism,' sets of differences have emerged within each state, largely as a function of the 'top-down' nature of a maximum-security penitentiary." This differentiation is primarily a result of decisions by the Warden of each facility to determine exactly how a prison's "execution team" will operate. In particular, Osofsky points out that a Warden in Louisiana emphasizes "religion and openness," while a Warden in Alabama favors a "code of silence" and a Warden in Mississippi stresses a need to act with "extensive formality."

Shortly after publication in *SURJ*, Osofsky was invited to an execution in Louisiana, which offered a unique perspective on the actual mechanism of execu-

tion. He speaks particularly vividly of the emotions surrounding the act itself and the way in which "what came through was the need to express professionalism as a coping device, an almost strange reality where the officers' means of making sure that everything worked was by not letting mistakes occur. The concept of taking another's life seemed to weigh heavily on their minds, and many opposed the death penalty. Still, the need to do a good job was supreme, and they were all able to perform their roles on the execution team. The implications are profound in that it is possible for normal people to humanize an entirely dehumanized process."

Personally, Osofsky admits, "I couldn't help being overwhelmed by an eerie feeling. While I've read a lot about capital punishment in books and the media, the feelings I experienced when that inmate looked me in the eye less than fifteen minutes before he died will never leave me. No one really seemed to want to be there, yet we were there, inextricably caught within the laws of the land."

After publication in *SURJ*, Osofsky has gone on to present at numerous prestigious events including the 155th and 156th Annual Meeting of the American Psychiatric Association. He has also published in several other journals including *Psychiatry: Interpersonal and Biological Processes* and *Criminal Defense Weekly Magazine*.

For the future, Osofsky has received interest from several additional states to extend his research and plans on continuing his work next year while in Ireland as a George Mitchell Scholar. He has also received interest from several publishers on putting together a book on his research and intends to do so in the coming year. Ultimately, he hopes to affect future policy decisions on the death penalty after finishing his Honors Thesis and Coterminal degree in Psychology this spring.



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# Research Authors

## Author Biographies



### ***Hilary Burbank***

Hilary Burbank is a senior double majoring in German studies and psychology, with a specialty in the mind, culture, and society track. Since coming to Stanford, she has spent seven months in Germany, during which time she conducted the research reported here with the sponsorship of Professor Amir Eshel and guidance of Professor Wolf Junghanns. In the fall of 2002, she presented the preliminary findings in a talk at Stanford's Symposium of Undergraduate Research in Progress. She helped found Stanford's Unitarian Universalist student fellowship, and especially enjoys Emerson, Kierkegaard, and other Existentialists. In addition to being elected early to Phi Beta Kappa, she's a President's Scholar and member of Cap and Gown as well as Psi Chi. She's currently serving her third year as a resident writing tutor while finishing up honors theses in the German and psychology departments with the help of Professor Hazel Markus. After spending the summer catching up on sleep, she will spend next year in Berlin on a Fulbright scholarship, then head to graduate school in social psychology. Mentors: Professors Wolf Junghanns, Amir Eshel, and Hazel Markus



### ***Mark J. Dominik***

Mark Dominik, originally from Homewood, Illinois, is currently a Junior majoring in Italian and pursuing a minor in Latin. While at Stanford, he received the President's Award for Academic Excellence in the Freshman year. Mark is actively involved with *The Stanford Daily*, and has served as Staff Development Coordinator, a News Editor, an Opinions Editor, and a member of the paper's Editorial Board. Mark has also served extensively on Faculty Senate committees while at Stanford, as a voting member of the Committee for Undergraduate Studies, Committee for Academic Appraisal and Achievement, and the Subcommittee on General Education Requirements. Last summer, Mark worked with the Stanford team of archaeologists excavating at Monte Polizzo in Sicily. In Winter quarter of this year, Mark studied at Stanford's Florence campus. This summer, he will be researching newspaper readership and freedom of the press for the World Association of Newspapers in Paris. He would like to thank Professor Carolyn Springer for help with the preparation of the English version of his paper for publication. Mentor: Brigitte Cazelles

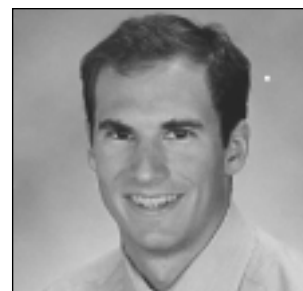


### ***Becca Hall***

Becca Hall is a senior who loves writing, reading and dreaming poetry. She is ostensibly an English major, but she actually studies poetry, agriculture, and anything else that has to do with people celebrating the earth. She spent last summer in fields of Queen Anne's Lace, and would like you to know that they truly do have tiny purple blemishes at the center of each flower.

### ***Thomas Loverro***

Thomas Loverro is a senior from East Hampton, NY. He is a Political Science major with a focus in International Relations and a History minor. His primary interests are business and government. He first became interested in legacy preference while attending St. Paul's School, a boarding high school in New Hampshire, which practiced the policy. Since writing this essay, Tom has contributed to a series of articles in *The Wall Street Journal* by Dan Golden, a former John S. Knight Fellow at Stanford, on the topic of legacy. Starting next year, Tom will be working for Goldman, Sachs & Co.'s Investment Banking Division in New York City. His career goals are to found his own business and to work in the Federal government to help achieve better educational equity. Tom is the President of the Stanford Windsurfing & Kitesurfing Club, a Political Science Peer Advisor, and on the Sixth Man Committee. Tom would like to thank Professor Rob Reich for all of his invaluable contributions and editing. Mentors: Rob Reich, Jon Reider, and Jean Fetter Chu



### ***Emily J. Ma***

Emily Ma hails from Vancouver, Canada and is currently a senior pursuing the co-terminal program in mechanical engineering. She was connected with her research in the summer of 2001 after finding a photodocumentary on the Biomimetics Robotics Laboratory in the book "Robo Sapiens: An Evolution of a New Species". This research has given Emily the opportunity to dip her toes into all aspects of bio-inspired robotics - from building circuits and hacking code, to raising two live American cockroaches. Emily is currently very interested in expanding the realm of robust tactile sensing and feedback in mobile robotics. She has just co-authored her first conference paper on this subject for the International Symposium of Robotics Research. She will continue her research work under the auspices of Professor Mark Cutkosky (Stanford) and Professor Noah Cowan (Johns Hopkins) into her co-terminal year. Emily aspires to integrate her newfound interest in biology with her love of engineering in medical robotics. Outside of research, Emily is a Stanford Mayfield Fellow, Co-president of the Stanford Society of Women Engineers, and a student speaker and journalist for the Stanford Campaign for Undergraduate Education. She also has a penchant for working on fireworks shows, including the 2002 San Jose July the Fourth fireworks, and for dragonboating with her local team, Ripple Effect.



### ***Bernardo Malfitano***

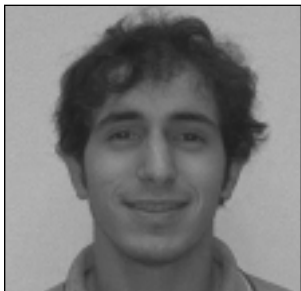
Bernardo Malfitano is a Junior majoring in Mechanical Engineering. Bernardo grew up in Brazil, and is an IB Bilingual Diploma graduate of The British School of Rio de Janeiro. A member of the Stanford Band, he is also in the Phi Kappa Psi fraternity, volunteers to teach and tutor middle- and high-schoolers at nearby schools, and participates actively in the Stanford social-dance community. He is an amateur airshow photographer, aspiring aviation artist, and passionate fan of all things aeronautical. He is currently teaching a high-school course he wrote and planned on the science and history of airplane design. Bernardo makes small scale aircraft models and flies larger ones, and is also a student pilot. In his plans is a Masters in Aeronautics. He has done aerodynamics research for Godfrey Mungal and Mark Cappeli over the summer of 2002, and will do so again this coming summer. Bernardo has been an avid video gamer since he was 5, and during his early adolescence became interested in the culture and technology of video games. At Stanford, this naturally led him to Professor Henry Lowood's class on the history, culture, business and design of videogames. The initial version of this paper was written for Professor Lowood's class. It has since been much improved; pictures were added, and the paper was expanded, elaborated, and edited. Mentors: Henry Lowood, Rene Patnode





***Anne Nguyen***

Anne Nguyen is a senior from Redondo Beach, California. She has two loving parents, Mr. and Mrs. Trien and MyLinh Nguyen, and two brothers, Ray and Ron. Recently, she has completed her major in Human Biology, concentrating in the area of Cultural Impacts on Health. Anne will be graduating and getting married this June, and looks forward to attending UCLA Medical School in the fall. During the summer of 2002, Anne spent two months studying abroad in Ho Chi Minh City, Vietnam, where she conducted her research. She wishes to extend a special thanks to her Vietnamese friends, Quoc Tram Nguyen and Ha Nghia, for their many hours of assistance in conducting and translating interviews at the Mental Health Center. Mentors: Narquis Barak; Dr. Rona Hu, M.D., Dr. William Hurlbut, M.D.



***Andrei Pop***

Andrei Pop was born in Bucuresti, Romania, in June of 1981, and came to the United States with his parents and baby sister ten years later. He attended middle school in Los Angeles, moved to the San Fernando Valley for high school, and now lives (when he is at home) in Orange County; this sequence of habitation has instilled in him an appreciation for the diversity of Southern California living. He is now a senior at Stanford, majoring in Art History with a minor in Computer Science.



***Casey Riffel***

Despite the effort he invested in resisting the temptations of Instant Messaging, Casey Riffel admits that this paper provided a convenient excuse to budget time for chatting online. Currently a sophomore at Stanford University, he tries to remain eclectic, thus majoring in Interdisciplinary Studies in the Humanities. Originally from Snohomish, Washington, he prefers to be where the Pacific Ocean is never more than a short drive away. The summer after freshman year, he participated in Stanford's Summer Research College, working with Sociology Professor Doug McAdam on his study of the Teach For America program and its effect on civic participation. Although he is cultivating an attraction to the social sciences, Casey's primary passions remain literature and creative writing. His academic interests include the theory and practice of prose fiction, gay and lesbian studies, and theories of the modern metropolis. A creative writer since his pre-teen years, Casey is involved with *The Mind's Eye* literary magazine, which he hopes to serve as Editor-in-Chief next year. Somewhere down the line, he hopes to find himself teaching literature at a university not very far from the ocean. He also regrets that Stanford does not allow undergraduates to have cats in their dorms. His mother and father are the best things that ever happened to him. Mentors: Professor Paul Robinson, History; Dr. Suzanne Greenberg, SLE



***Alexander Robbins***

Alex Robbins is a junior majoring in History and Economics, with a prospective minor in Physics. At Stanford he has participated in Mock Trial, Stanford in Government, and the Forum for American-Chinese Exchange at Stanford (FACES). He has also written for a number of publication including the *Stanford Review*, *Journal of International Relations*, and *Undergraduate History Journal*. Next year he will be on staff at the "Global Affairs" themed dormitory, and hopes after graduation to attend law school.

### ***Jason Rosensweig***

Born Bethesda, MD, Jason will graduate from Stanford in 2004 with a BA in Comparative Literature with Honors and an MA in French Literature. He was fortunate enough to participate on a Stanford archaeological dig at the Monte Polizzo site in Sicily, as well as to study abroad on the Stanford programs in Paris and Florence. This year, he was an undergraduate fellow at the Stanford Humanities Center, where he worked with Professor Amy Schmitter on sense perception, language, and representation in Descartes and Hobbes. He also received a Vice Provost for Undergraduate Education Faculty Grant to work with Professor Haun Saussy on the intersection of psychology, linguistics, and poetics in 19th and early 20th century France. After Stanford, he plans to go on to a doctoral program in Comparative Literature, where he will continue his studies in literature, philosophy, art, and history. In his undergraduate thesis, he will explore Western Cynicism and the novel between 1857 and 1939. His paper on Donatello and Ghiberti was written for Professor Timothy Verdon while on the Stanford program in Florence this past fall; he had the good fortune to study and enjoy these and other masters in situ, and with the peripatetic, wise, prophetic, inspiring bass of Professor Verdon as his guide.



### ***Varun Saxena***

Varun Saxena is currently a junior majoring in Chemistry with a minor in Economics. During his three years at Stanford, Varun has received several awards including the Stanford Chemistry Undergraduate Bing Research Fellowship. He has been active in a many roles on campus. Varun is currently the Head Peer Academic Coordinator (HPAC) in Twain House. In this position, he provides academic counseling for over 110 Stanford students. He is also currently the Public Relations Director of Shadowing for Clinical Opportunity and Pre-medical Experience (SCOPE). SCOPE is a program where Stanford students are given the opportunity to shadow Emergency Room doctors at El Camino Hospital. Recently, Varun was awarded the I.M. Kolthoff award. This award funded his travel to the American Chemical Society (ACS) 2003 Spring National Meeting in New Orleans where he presented a poster of his research. He has worked in neurobiology with Dr. Michael Sofroniew at UCLA as well as in analytical chemistry with Dr. Richard Zare at Stanford University. Varun hopes to attend medical school after his undergraduate career. He also wishes to thank his family and his friends for their continual support of all his endeavors.



### ***Adam Tenforde***

Adam Tenforde is a senior majoring in Human Biology. Next year, he will be completing a Masters of Science in the Biological Sciences Co-terminal program. He has competed on the Stanford Cross Country and Track and Field Teams throughout his time at Stanford, where he has been a three-time All-American and contributed to two National Championships. His academic interests include human and exercise physiology, sports medicine, and psychology. Research experiences include a three year internship at Battelle Northwest National Laboratory in molecular modeling as well as NMR of protein and DNA structures. Current research projects include hypoxia altitude study, sport psychology research, concussion recovery using fMRI as well as thermal regulation research, in which he received a URO Major Grant and is completing an honor thesis. Future aspirations include running professionally as well as medical school and/or completing a PhD program. Mentor: Professor H Craig Heller

