# A people-centred view on paratransit in South Africa[☆,☆☆]

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## Abstract

Paratransit provides a valuable service offering as a flexible and substitutional mode between formal transit and private car. When it evolves to compete with more formal transit modes, efforts are made to formalise it. As in many developing countries, the South African government generally views paratransit as a necessary nuisance, emerging and evolving in the absence of more formal transit services. Our paper aims to contribute by providing a more comprehensive context for the South African case: how specific Apartheid laws contributed to the formation of the mode and how deregulation provided a fertile ground for its exponential growth. The industry has evolved into an informal yet well-organised system that dominates the local transit market. Contrary to the popular view that the industry is an amorphous whole, this paper aims to create a more people-centred view of an industry that is made up of individuals trying to carve an existence in a harsh economic environment. We show how, if approached correctly, paratransit is more likely part of the land use and transport solution, and not a problem as it is often perceived to be.

*Keywords:* Paratransit, Minibus, Africa, South Africa

## 1. Introduction

As a flexible mode of transport, paratransit provides mobility in a variety of settings, taking on various forms. Orski (1975) uses the term *paratransit* to collectively describe transport services such as dial-a-ride, shared taxi, community transit, subscription bus or jitneys. Roos and Alschuler (1975) describe it as *personalised public transport* and they provide an early taxonomy that distinguishes between the temporal and spatial flexibility of different service offerings. In fully demand-responsive services such as premium taxis and dial-a-ride, customers can request door-to-door services anywhere in the service area. Such systems are often complimentary to formal public transit and fill a niche in providing mobility to the elderly and disabled (Nguyen-Hoang and Yeung, 2010). Zografos et al. (2008) provide various business models and confirm the viability of paratransit as a complimentary mode.

The term *jitney* is frequently used to describe systems in which medium-sized vehicles (8–30 customers) are used on mainly fixed routes where vehicles pick up and drop off customers along the route, often deviating from the route on request. Customers would hail a vehicle on demand without

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prior scheduling. An early example of jitneys being used is in the Netherlands (Hupkes, 1972), while Cervero and Golub (2007) and Schalekamp and Behrens (2009) cite more recent incidences, mainly in the developing world: Indonesia, Jamaica, Brazil and South Africa. Paratransit often emerges in the absence of formal transit, or in response to low quality and intermittent services, for example in rural areas.

Although paratransit is a promising mode to provide flexible and more cost-effective transport than its formal counterpart, it usually evolves to be in direct competition with formal transit, resulting in authorities viewing them as a (necessary) nuisance that should be formalised.

Observing the minibus taxis—the jitney-like paratransit in South Africa—one may easily consider them a chaotic bunch of freelance drivers: no formal stops, no schedules, no routes and irregular yet continuous hooting in the street for patrons. Cervero and Golub (2007) highlight the ruthless and deadly nature of rival cartels fighting over the most lucrative routes, noting how "almost literally 'cutthroat competition' " has taken its toll in South Africa. As Smillie et al. (2007) state in their newspaper article title: 'This is not like war—it is war'.

If the mode indeed operates on a principle of *laissez-faire*, and provides all but safe transport, what is there to learn from its growth into being the dominant urban mode? In Gauteng, the economic nucleus of the country that includes Johannesburg, Tshwane (Pretoria) and Ekurhuleni, as much as 70% of all transit trips are made using paratransit, so it is by no means a small illegal operation anymore, and its use exceeds even that of private car when considering all trip purposes (Department of Transport, 2007).

We argue in this paper that paratransit has a valuable role to play in the future of both developed and developing cities. To appreciate its role, we use South Africa's taxis as a case study and show why better understanding of the mode opens opportunities and establishes its potential niche. In the remainder of the paper we will use the terms *taxis* and *taxi industry* to describe the jitney-like paratransit mode in South Africa using minibuses. The terms do not imply metered taxis as is often the case internationally. A historical background is given on how the mode emerged and rose to dominance, underlined by the social and political structures of a people living under the harsh and restrictive laws of apartheid until 1994. Apartheid, poverty, people living in outlying areas and deficient transport in and around the cities, fashioned the explosion that is the taxi industry today and promoted the singularly unique, organic spirit of transport operations in South Africa.

The paratransit phenomenon brings together two distinct areas of research, which are nonetheless intimately connected aspects of mobility in South Africa; namely, African cultural behaviourism and taxi *hospitality*.

Literature on the South African taxi industry is sparse, specifically concerning its detailed operations. Some of the early work include Dugard (1996, 2001), Khosa (1994), McCaul (1990) and Pirie (1992b) who all provide historical contexts for the emergence of the mode, and its relationships with other modes and government. More recent work by Schalekamp and Behrens (2010) and Venter (2011) review the failed attempts by government to successfully engage with the taxi industry in its formalisation attempts.

For a paratransit mode to evolve, especially in the South African context, a good deal of local tacit knowledge is required. The barrier to entry for new operators and especially users is indeed this lack of knowledge of the diverse cultural behaviourism, which is exacerbated in a country where there are eleven official languages.

In an attempt to capture this tacit knowledge more precisely, we employ qualitative methods of participant observation as the main methodology for our research. As qualitative research has an emergent, as opposed to predetermined design, it allows both the process and the outcomes or products of the research to evolve (Hoepfl, 1997). Our research is mainly concentrated on semi-structured interviews with a) designers and engineers in the transport industry, b) taxi drivers and

c) commuters. Kriel (2003) reflects on the value of person-centred interviews after being involved in a typical transport planning stated preference study in South Africa. Citing Poulenez-Donovan and Ulberg: "qualitative research is vital to understanding the complexity of transportation behaviour, which rests upon the subjective beliefs and behaviours of the individual person", Kriel acknowledges that it is dangerous to over-generalise transport behaviour, even for a single mode. To that extent, the taxi industry is often viewed as an amorphous, yet homogeneous group of taxi owners who are "lawless thugs at worst, rude business owners with bad customer relations at best" (Terblanche, 2006a). Our results suggest that the majority are actually autonomous individuals, either local Gauteng residents or migrants from all over Southern Africa, trying to carve an existence amidst societal and economic pressure.

Section 2 provides the political context of South Africa and how the taxi industry was established as a result of, and in response to, the political situation. We aim to capture the essence of the behavioural dynamics in the industry. Section 3 provides the background to a number of recent government interventions aimed at formalising the taxi industry. We discuss the managerial implications in Section 4 by critically considering some of the success factors in the interventions, and identify a promising approach to establish a paratransit niche. The paper is concluded in Section 5 with a summary of our scholarly contributions and the setting of a research agenda. The appendix provides more detail on the colloquialisms used in the taxi industry.

## 2. The South African paratransit industry

Minibus taxi transport and the associated vernacular emerged as a consequence of the system of segregation in South Africa and the resulting absence of any meaningful means of transport from 1908 onwards (Pirie, 1992a). Van Onselen's (2001) account of the very first cab drivers in Johannesburg from 1886–1914, evidences the situation of cab drivers for horse drawn carts at the turn of the century: having important parallels to some of the problems that have beset the taxi drivers of this 21st century. Hand signals developed over time because of a need to communicate a destination and exact a means of travel.

### 2.1. Political history

The British conquered the mineral-rich republics of Transvaal and the Orange Free State during the Second Boer War, which ended in 1902 with the signing of the Treaty of Vereeniging. Both the Transvaal and the Orange Free State were made self-governing colonies of the British Empire, the latter being renamed Orange River Colony. Shortly after, the Union of South Africa was established in 1910, joining the Cape, Natal, Transvaal and the Orange River Colony.

In 1913, under British rule, the Natives Land Act was passed, limiting black land ownership to selected black territories. The subsequent Native Urban Areas Act No 21 of 1923 and later the Natives (Urban Areas) Consolidation Act No 25 of 1945 divided South Africa into *urban* and *rural* areas and strictly controlled the movement of (mainly) black males between the two. Towns and cities became mainly white, since only domestic workers were allowed to live in town. In 1948 the policy of Apartheid was officially adopted when the then National Party came into power, and apartheid laws started to be passed. This included the Prohibition of Mixed Marriages Act in 1949, the Immorality Act, Group Areas Act, the Suppression of Communist Act and the Population Registration Act, the latter officially dividing South Africans as being either *White*, *Coloured*, *Asian* or *Native*. The first forced relocation also took place in 1949 when 80 000 Africans were moved to the SOuth-WEstern TOwnship, better known by the English syllabic abbreviation, Soweto, located on the South-Western periphery of the City of Johannesburg, Gauteng.

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In 1961 South Africa withdrew from the Commonwealth and became a Republic. Mounting international pressure regarding the country's racial segregation resulted in the United Nations instituting sanctions in 1962. Under Resolution 1761, South Africa became isolated both politically and economically.

Transport, specifically, had its own story to tell during the apartheid years. During the apartheid struggle, public transport services became sporadic and unpredictable. With the majority of the wealth already distributed amongst the minority whites, public transport became associated with low-income non-whites, while whites relied more and more on private cars, usually two per family.

To highlight the economic importance of transport infrastructure, many of the armed resistance attacks of Umkhonto we Sizwe and the Azanian People's Liberation Army (APLA), the military wings of the African National Congress (ANC) and the Pan Africanist Congress (PAC) respectively, were aimed at mainly railway lines and stations. Public Utility Transport Corporation (PUTCO) buses and staff were also frequently under attack during the 1980 upheavals, with a bus being torched in 1984 when drivers and employees did not participate in anti-apartheid strikes. When transport infrastructure came under attack during the 1980s, having a car bought some peace-of-mind, isolating many people further from the reality around them.

### 2.2. Paratransit history

From the early history in South Africa, the Motor Carrier Transportation Act of 1930 prohibited the transportation of passengers by road without a permit, essentially making transport a state monopoly held by the South African Transport Service (SATS). The act was also an attempt to protect the state-owned railways from competition from road transport. Taxis were restricted to carrying more than 4 passengers.

Ezra Singadi, a black South African interviewed in March 2010, recounted his personal experience during apartheid in the 1970s and 1980s, when transport into the cities for *blacks only* were originally municipality buses and the PUTCO buses established in 1945. Train stations had become centres of frustration for would-be commuters. On arrival there would be no knowing how long it would be before the next train left or if there would be a place on the train to accommodate even half of the passengers waiting to board. The trains were divided into two sections, first-class carriages for whites, which took up more than half of the train despite the disproportionate numbers of black:white ratio. Far fewer carriages were set aside for *people of colour* and as a result many people were unable to get to work on time or even unable to get to work at all. Apartheid on trains and at railway stations in South Africa was at its most extreme in the 1960s and early 1970s (Pirie, 1992a).

As a result of the Native (Urban Areas) Consolidation Act, black males could not prove they lived in a magisterial district which, in turn, meant they could not obtain a Daily Labourer's Permit, a prerequisite to obtain taxi operating licenses. Blacks who were fortunate enough to own a car began to give lifts to people stranded at the station, for which they charged a small fee. Many taxis started to operate illegally as a result, especially in unserviced rural areas.

This too was frowned upon by the police and often landed the drivers and their passengers in jail, especially if people were found to be making a habit of this practice. Increasingly though, black entrepreneurs began to realise that there was an opportunity to circumvent the laws which prohibited black people from owning businesses. If a person could loan or buy a vehicle they could start their own business as an owner or driver.

After the 1976 uprising that started in Soweto, the Van Breda Commission of Inquiry found that South Africa "had reached a stage of economic and industrial development which enabled it to move towards a freer competition in transportation" (McCaul, 1990, p. 38). The Road Transportation Act of 1977 did not define taxis per se but implied a *bus* to be a vehicle carrying more than nine

people (including the driver). This loophole in legislation resulted in the legal use of minibus vehicles to carry 8 passengers without having to conform to strict public transport vehicle regulations. All operators carrying for gain still had to acquire authorisation in the form of a public carrier permit from a Local Road Transportation Board (LRTB).

The first taxi permits were area-based and authorised taxi drivers to operate in regions with a radius of 100 kilometers around a central point. Competition for passengers was fierce and there was conflict between drivers over ownership of routes. Violent clashes ensued. The then Minister of Transport, Hendrick Schoeman, appointed the controversial *Welgemoed Commission of Inquiry* to look into the bus passenger transportation. He recommended that bus companies be protected from the *kombi* vehicles and that taxis no longer be allowed to carry 8 passengers. Taxis should go back to using the 4 passenger sedan vehicles. The Commission proposed stronger regulation and a separate category for vehicles carrying between 5 and 25 passengers and acknowledged legal (and illegal) taxis as direct competition for buses.

In an interview during August 2011, Solly Msiza, both a taxi driver and youth league leader during the early 1980s, recalled how groups of political activists, called *comrades*, would get aboard taxis and force them to abandon their business and take them to political rallies. Having stakes in both the taxi and political realms, Msiza was later instrumental in better non-detrimental alignment between the two groups.

Msiza recounts the efforts of Godfrey Ntlatleng, the leader of the Pretoria United Taxi Association (PUTA) at the time. Ntlatleng had as his business adviser a young white lawyer named James Chapman. Ntlatleng told Chapman that they, the taxi owners, "are having problems with government — they're going to kill our industry". Chapman challenged government and threatened court action. After meeting with the taxi industry, government relented and awarded the right to operate 10-seater buses. The National Transport Policy Study (NTPS), established in 1984, recommended that the taxis carrying up to 15 passengers be allowed to compete with buses and that illegal operators be granted permits on a quota basis. This was quashed in 1985 when the Competition Board opposed the quota system, insisting that the only control to be met should be a legal operator and a road worthy vehicle. Delays in legal amendments saw the Local Road Transportation Board (LRTB) reject 64% of permits from Soweto-based applications and as much as 84% for Soweto-Johannesburg applications (McCaul, 1990). This fueled the already volatile political situation. The White Paper on National Transport Policy of 1987 paved the way for deregulation, which was partially manifested in the Transport Advisory Council Act of 1987. Consultation forums were set up. The Transport Deregulation Act of 1988 allowed for the phased repeal of the Road Transportation Act of 1977 and the Road Traffic Act of 1989. During the transitional phase the number of taxi permits issued increased from 3 782 in 1985/6 to 16 800 in 1986/7 and 39 604 in 1987/8.

The South African Black Taxi Association (SABTA), the only recognised body by the end of 1989, warned that blanket deregulation such as this would lead to too many operators entering the market too soon and would result in chaos and violence. SABTA referred to the sudden deregulation as apartheid in a new disguise since deregulation, according to SABTA, flooded the market with pirate taxis and newcomers and aimed at fragmenting the taxi industry. They argued that the white government used regulation to acquire wealth for themselves and now that the taxi industry had, in its own way, started building some wealth through self-regulation, the government was forcing deregulation on them.

Many opportunistic whites applied for taxi operating licenses and made them available at a fee to black operators. This was a major aggravation and a three-year transition period was agreed upon after which pirate taxis would be legalised and permits would be freely available. Local taxi liaison committees (later referred to as local taxi councils) were to be set up in all major centres and be responsible for decisions regarding the use of ranking facilities. Local authorities would then

be responsible for regulating the industry through bylaws and rank permits, the latter being the definitive authority for operating permits.

The railway police were responsible for transport law enforcement, originally to protect the monopolistic SATS of the time. Resulting from the Road Transportation Act of 1977, the railway police later enforced public transport permits too. Since the railway police's dissolution in 1986, permit enforcement was suddenly severely slackened to the extent that taxi organisations took matters into their own hands to limit illegal entrants. In Johannesburg, for example, the City Council set up a ten-man taxi squad in 1988 to deal with the traffic violations. Self-regulation and enforcement lead to sectarian wars among taxi associations and between taxi associations and pirate operators over lucrative routes. This added violence to the already tainted political situation (Dugard, 2001).

### 2.3. Dynamics in the paratransit structure

The taxi industry is often referred to as a single entity but in itself the industry underwent changes over time and remains dynamic. This complicated matters in any negotiations between government and the industry.

James Chapman recalled how he started his journey with the taxi industry in an interview during August 2011. In 1978, Chapman was the owner of a small refuelling station in Pretoria on the corner of Boom and Bloed Streets, which his family owned. The refuelling station still exists and the area is one of the major taxi rank areas in the Pretoria central business district today. At the back of the refuelling station was the headquarters of the Pretoria and District Natives Taxi Organisation (PADNATO). In Chapman's words: "My first thought was, I'm going to walk over to this rank and say to these guys—because I had a little service station, which was a real dog—I'm going to go to them and say 'I want you to come and fill petrol here', so I could build my petrol sales and sell it. And I walked into the rank, and by the way, coming from a white background, this was my first interaction with black people".

PADNATO, a member organisation of SABTA, was Chapman's entry into the taxi industry; first as a service provider and later as advisor, secretary and legal advisor. Chapman is currently general manager of Taxi Choice, the business arm of the South African National Taxi Council (SANTACO). Chapman remains instrumental in engaging with government to change laws and bridge the cultural divide between the taxi industry and government.

Chapman convinced government to recognise SABTA as the main taxi organisation. There were, however, other contentious issues. There was animosity between SABTA and the South African Long Distance Taxi Association (SALDTA). There were no permits allotted for taxis to drive between cities. Despite being issued many fines, the SALDTA drivers continued illegally until the government had to issue long-distance permits. SABTA nonetheless believed it was their right as residents in the area to control the more lucrative long-distance routes. Msiza describes how the guns, literally, came out: "I remember going to Newcastle and when I got to the taxi rank there were people dead at the taxi rank and I realised it was the conflict between our members and SALDTA members" (Msiza interview, 2011). The government solution was to split the taxi ranks: half for SALDTA and half for SABTA. By that time many associations had sprung up apart from SABTA. This included the National African Federated Transport Organisation (NAFTO), affiliated to the National Federated Chamber of Commerce (NAFCOC); the United Long-distance Taxi Association (ULTA) and the Transport Operators Peace Initiative Conglomerate Association (TOPICA). The violence continued unabated.

With the end of apartheid in 1994, Nelson Mandela became the first democratically elected president. The then Minister of Transport, Dullar Omar, proposed that the fractured transport industry be organised into one entity and avoid competing against each other. The new government

changed the taxi permits, retracting the area-based operating licences and converted them to more specific route-based permits. Government found that there were dozens of so called *Mother bodies* claiming to represent the taxi industry. SABTA then mobilised to form the South African Taxi Council (SATACO). A second group also assembled and called themselves the National Taxi Alliance (NTA).

Government attempted to find a method to negotiate with the various taxi leaders and to do so in a way that gave them the best chance of hearing all voices in the taxi industry. It soon became evident that one of the greatest problems related to the taxi industry was indeed the many voices that claimed to represent the industry. Very few of these mother bodies were in any way democratic and were run by warlords who did not have the interests of the taxi industry at heart. After a protracted period of negotiation and implementation by both government and the various so called leaders in the taxi industry, the National Taxi Conference was held in Durban on the weekend of 15 September 2001 (Bubesi, 2000).

A democratic structure was voted in to place by the taxi industry, under the guidance of government and under the careful and watchful eye of the Independent Electoral Commission. At the same event a new constitution for all taxi industry structures were adopted, which created the requirement of a four yearly election process where each and every taxi man could vote for the leadership of his choice for the next four year term of office. Elections start at local level through regional and provincial level and finally at national level. Elected officials who have not delivered to the industry are voted out of power.

To unite the fragmented and strife-ridden industry, the NTA, SATACO and the nine provincial taxi councils voted the newly formed South African National Taxi Council (SANTACO) into power (Liebenberg, 2001). Although united by name, NTA remained an independent active organisation with many associations affiliated directly to it.

As a result of the deregulation, the taxi industry remained largely over-traded. Competition for lucrative routes became higher. Ambiguous permits, associations claiming taxi ranks and subsequent conflicts between local and long-distance taxi associations at the ranks, often resulted in violent clashes. These violent attacks are often cited in literature (Cervero and Golub, 2007). Chapman recalls how a particularly courageous man, a true veteran, TJ Ngcoya handled himself during one of these violent clashes in a taxi rank: "He's one of the guys, such a brave man. He'd walk into the middle of the rank, and there'd actually be shooting on the rank and stand in the middle of the rank, dead quiet, until the shooting stopped, and he'd say: 'guys, put your guns down, come over here, we're going to sit here and talk, until we've resolved this issue'. And I must tell you, 99% of the time, that would be the end of it. They would sit there, they'd bring lights on at night, they'd be sitting through part of the evening". Ngoya was President of SABTA. Many attempts to broker peace between rival taxi associations have, unfortunately, lead to the ambush and killing of the peace brokers themselves (Masipa, 1997; Masipa and Rodney, 1997; Mothabeli, 1997).

In the late 1990s the war-mongers — or taxi untouchables, as they were also referred to — ruled by fear and violence and set up hit squads that roamed to patrol their territories. The increased violence lead to three government departments, Transport, Safety and Security and Justice, jointly setting up dedicated task forces to curtail the violence.

Despite the harsh reality of having to survive so many apparently lawless taxis in the city, there is another side of the story that many people may not be aware of. Chapman addresses the issue of the reverse situation, which is what he considers government aggression towards taxis. He describes the so called 'fairness' in the British taxi transport situation where "in Britain the taxi industry is regarded as a profession, you can't become a taxi driver or owner unless you pass the Norwich

Test[3], which is very difficult. Some guys study for 4 years. So they ask 'why can't we be like British cab drivers?' There's three reasons. Firstly, look at the line of reporting of the British cab drivers in terms of the line management of taxis in the government. They report to the Metropolitan Police who report to the department of transport. And every single taxi operator in London becomes a Reservist in the Metropolitan Police. That's the first thing". Chapman argues that in comparison to taxi drivers in South Africa, British cab drivers are expected to reach a highly respected level of competency and that the industry is well structured and controlled. In the second place he says taxi drivers are not subsidised by government whereas buses and other systems of transport are. Financially, South African taxi drivers are far worse off, he explains that this is one of the causes of driver inhospitality. Here he reiterates that operators in the taxi industry still have to learn hospitality, or 'ubuntu' in dealing with their clientele yet equally, taxi operators also need to be valued for their contribution to the transport industry.

### 2.4. Grassroots taxi operations

From one of the earlier taxi organisations in 1937, with its own offices and executives, the industry has grown exponentially and today captures more than 75% of transit in Gauteng (Department of Transport, 2007). It remains essentially *informal* and, with the exception of its inclusion in recent Bus Rapid Transit (BRT) programmes, is almost exclusively unsubsidised by government. Taxi operators are faced with daily frustrations: they receive no formal training and enjoy no employment protection, despite the existence of progressive labour laws.

Historically, being unable to invest in real estate or other fixed assets, many black families bought vehicles that could earn them a return on their investment when being used as a taxi. Although there was a move away from the owner-operator model of the 1980s, the heart of the taxi industry remains many family-owned, entrepreneurial enterprises. Paul Browning, long term observer and adviser to the taxi industry, remarks in an interview in September 2011 that "it is really easy to operate a taxi business. Just get a permit and a vehicle, arrange with your unemployed brother-in-law to drive the taxi, and you are in this income-earning business".

In countless conversations with taxi drivers over the years and particularly, in a planned interview with four young taxi drivers in Pretoria on 24 August 2011, involvement in the taxi industry is, for the majority of employment seekers, one of subsistence.

Isaac Skhosana started off by washing taxis, saving money to pay for his driving lessons and license. While getting to know taxi drivers from the different associations, he *progressed* to become a *marshal* (unaffiliated with any association). Skhosana now earns his money by sourcing commuters from the sidewalks in the Central Business District (CBD) and directing them to the taxi that services their destination. It is noteworthy that taxi destinations and routes are not indicated on the vehicles. Since many taxi commuters are picked up on the sidewalk as opposed to formal sign-posted ranks, commuters are reliant on other commuters, drivers or marshals, such as Skhosana, sharing their acquired expertise to find the appropriate vehicle. Taxis mostly depart only when full, so the quicker a taxi is filled, the earlier its departure. Once filled, the taxi driver remunerates the marshal in cash.

It was in this way that Lesley Thiyo saved for his license. Once the young drivers obtained their drivers licenses, having built a social network of taxi drivers, they started filling in for taxi drivers who needed a temporary replacement. Once a taxi driver leaves the industry, a permanent position opens for an aspiring driver. Long distance associations have a more formal approach in

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[3]The *'Norwich Test'* is a colloquial term used to describe the practical assessment that is part of the Driving Standards Agency (DSA) taxi assessment. Candidate drivers are expected to know the city well enough and navigate their way without being given turn-by-turn directions from the examiner

that aspiring drivers can put their names on an *available driver* waiting list. Taxi owners belonging to the associations then have a more central point of contact, although acquaintances are often considered first.

Rufus Tloubatla is one young driver who has further aspirations and being a taxi driver is not the ultimate goal. He has applied for numerous, more permanent positions in the business sector. In a country with unemployment of approximately 25%, Thloubatla had to settle for less and started driving for his older brother in 2004. His brother (who lives in Limpopo, the northern-most province of South Africa) has a full time job, and owns a single taxi registered with the Mamelodi Amalgamated Taxi Association (MATA). Each morning, Tloubatla starts his day shortly after 4am in Mamelodi, in the eastern part of Tshwane (Pretoria). The operating license of the vehicle stipulates that he may travel between Mamelodi and Pretoria, although only a very vague description of the route is given in his operating license. There is an unofficial agreement, though, that he will stay between Gezina in the North, and Pretorius Street in the South, a 3-kilometer wide band running east-west between Pretoria and Mamelodi.

Mandla Samuel has been driving the same PADNATO-registered taxi, belonging to his uncle, since 2007. His uncle owns three taxis, registered with different associations, all driven by family. Samuel's operating license allows him to travel between Pretoria-West and the Pretoria CBD. The aforementioned are examples of the endeavours of millions of young individuals who become part of the taxi transport industry informally at entry level. Many others who belong to the larger taxi associations have other commitments to face.

Msiza describes how "drivers are expected to meet certain daily financial targets for their bosses". Terblanche (2006b) explains that "taxi owners know, without keeping books, how much their drivers could and do bring in, the running costs of each vehicle, when to scrap a vehicle and when to fix it. Rather, the culture that infuses informal business springs from necessity — the aim is urgent fulfillment of needs, the thinking is immediate, the process hand to mouth".

Salary structures and agreements differ among the owners but two main models seem to emerge. In the first and most common, an owner specifies the daily *check-in* amount that is based on the distance of the vehicle's specific operating license route. Route prices are set by the associations and, as a member, the owner estimates a reasonable number of trips the vehicle can make in any one day, as well as calculate the *check-in* accordingly — taking all vehicle expenses, except fuel, into account. From the total weekly *check-in* earnings, the owner would then pay the driver a basic salary, typically 30% of the earnings.

In a cash-only environment, tracking the exact earnings is daunting. Whatever earnings a driver makes in excess of the agreed *check-in* amount, after fuel expenses have been covered, is for his own pocket.

In the second model, referred to by Tloubatla as working "under contract", an owner will price the *check-in* amount higher, closer to the total turnover and establish a weekly contract price. The driver will then spend the first portion of the week trying to accumulate the week's contract price, without having claim to any portion of the turnover. Once the *check-in* amount has been reached and paid over, the driver has the remainder of the week to drive for his own income.

Financial survival, frequency of routes travelled, time, passenger capacity and quantity of passengers become more important than traffic etiquette, hospitality, safety and rule of law. A taxi driver will stop anywhere on the road for any potential passenger signalling with a taxi hand sign in the direction s/he is travelling. There are predetermined rates for set distances. For instance, a 15-kilometer ride from Mamelodi to Pretoria might cost between ZAR 10 and ZAR 12 (South African Rand). However, if the taxi is not full, during off-peak periods, drivers may decide to give a reduced rate of ZAR 5 to a passenger showing the 5-finger taxi hand sign (Figure A.1a).

The development and evolution of hand signs and other taxi colloquialism is important since

it influences the dynamic taxi-commuter interaction. It is plausibly a contributing factor to the wide-spread use of taxis, and although not being the main focus of this paper, we provide a more elaborate discussion on the colloquialism in the appendix.

## 3. Interventions aimed at formalisation

In defining the term 'informal economy' as a unit of study, economic anthropologist Hart (1988) argues that "the informal economy might be a passive adjunct of growth originating elsewhere or its dynamism might be a crucial ingredient of economic transformation in some cases". This insight seems to reflect the South African situation.

In South Africa, two seemingly parallel economic systems had developed (Development Policy Research Unit, 2008). The first, popularised by the then President Thabo Mbeki in 2003 as the *first economy*, is a modern economy similar to that found in developed countries. The first economy is formal and is well-documented with receipts, records, a credit system and legally enforceable rights and remedies. Conversely, the *second economy* lacks all these things: it is informal, regulated most often only by community norms or self-appointed regulators and based on small taxless cash transactions. As described by Edwards (2007), the two economies are embedded in two parallel sets of infrastructures. They are the consequence of a racially segregated political past, heavily influenced by race and ethnicity, as well as class.

As the taxi industry is probably the largest single contributor to the second economy, government has made a number of efforts to formalise the industry and migrate it into the *first economy*. Terblanche (2006a,b) reported on a proposed tax amnesty considered for taxi owners: "of course, there are irrefutable arguments as to why [the taxi owners] should join the tax net and, intellectually most taxi owners agree. But emotionally, it remains a bitter pill". The taxi industry has indeed played a noticeable role in the fight against apartheid, rising as the dominant commuter carrier despite opposition from the former (and current) governments, without financial assistance such as subsidies. But the proverbial *struggle* is over and has been for more than 17 years. The sentiment among many taxi owners remains that, instead of appreciation for the effort and contribution towards mobility, government is out to punish through formalisation.

In this paper we argue that it is not *formalisation* per se that the taxi industry is opposing, but rather the blanket approach followed by government. In engaging the industry as a single homogeneous body (at national level), with large-scale nationwide initiatives, many aspects of the essential nature of the industry, i.e. its grassroots communal structure, is disregarded. In the remainder of this section we provide three specific examples of how engagements have failed, or succeeded in gaining acceptance within the taxi community.

### 3.1. Taxi recapitalisation

The first major effort to formalise the taxi industry was the Taxi Recapitalisation Program. This was a multi-billion rand effort from government to provide a ZAR 50 000 incentive to taxi owners; when the owners brought in their old and unroadworthy minibus taxis they could replace them with newer safety-standardised vehicles. As a requirement to participate in the scheme, taxi owners also had to convert their radial/area-based operating licenses for the more recent route-based licenses. This was an effort to limit taxis to specific routes and avoid possible violent clashes for lucrative routes where such routes are not well-defined.

The program was controversial enough to let former feuding taxi groups, most notably SATACO and NTA, to join under the unified umbrella of SANTACO. Government rejected NTA's resistance to the formation of the unified body, insisting to deal with the matter only if they have a single body representing the taxi industry.

The initiative was considered by many a failure. By October 2009 nearly 5 000 taxis were received in Gauteng alone (more than 28 000 nationally from an estimated taxi population exceeding 130 000 vehicles) at an incentive cost of ZAR 250-million (ZAR 1.4-billion nationally).

One of the major criticisms, as recollected recently by Venter (2011), is that both the drive by government for a single representative taxi body as well as the recapitalisation, follow a strong top-down approach. The plans, designed by government, could have had significant transformational impact on the taxi industry as a whole, yet it lacked sufficient engagement with an industry that, in essence, is structured bottom-up.

### 3.2. Bus Rapid Transit

With the success of Bus Rapid Transit (BRT) in other developing countries (see Deng and Nelson (2010) for a review), most notably Bogota in Columbia and Curitiba in Brazil, the South African government envisaged BRT to be a viable instrument to formalise the minibus taxi industry. In Johannesburg, the Rea Vaya system's Phase 1a was launched in time for the FIFA Soccer World Cup hosted by South Africa. In August 2009 the first route of the Rea Vaya connected Soweto to the Ellis Park Stadium in Johannesburg, followed by two more routes connecting Soweto to Johannesburg's CBD. The planning and implementation was not without conflict and controversy.

Msiza noted that SANTACO was opposed to the BRT at all levels: national, provincial and local. In a statement released by SANTACO in 2009, the council reflected on government's repeated failed attempts to involve the taxi industry in its planning. The council condemned government's fundamental approach in dealing with the industry, using interventions, such as the BRT, not to improve public transport, but as way to solve a problem... the minibus taxis:

> "For more than a century to date, the taxi industry successfully moved millions of people without subsidy competing against the state subsidized buses and trains... We endured the pains of the imposed deregulation era that led to violence and loss of lives because of the self-centred interests of the apartheid regime, 14 years into democracy we are now confronted with a roundtable systematic plot to nicely get rid of us."

The first phase of the BRT launched without agreements being reached with the taxi industry. Instead, an intermediate operating company was formed. On launch day, amidst armed guards and riot police, Sicelo Mabaso (Chairperson of the Top Six Taxi Association), Sipho Mntambo (President of the Top Six taxi group) and Eric Motshwane (Chairperson of the Greater Johannesburg Regional Taxi Council) joined the Johannesbug Mayor, Deputy Minister of Transport, Gauteng MEC (Member of the Executive Council) and other VIPs for the maiden voyage of Rea Vaya (Ndaba, 2009).

McCaul and Ntuli (2011) report in detail on the planning and negotiation process that finally lead to the establishment of PioTrans (Pty) Ltd, the BRT Operating Company (BOC) wholly owned by the "taxi industry". Each of the nine affected taxi associations that participated in the negotiations, established a Taxi Operator Investment Company (TOIC), which was eligible to subscribe for a number of shares equal to the number of its affected taxis. The City of Johannesburg secured the removal of taxi competition from the BRT routes. In return, the City agreed to pay the 313 shareholders — former owners of the 585 affected taxis — direct monthly payments, as opposed to yearly dividends, for the first four years of operation. This was to compensate for the loss of frequent payments that taxi owners were use to in a cash-only industry. The new BOC is paid per scheduled kilometer, regardless of passengers carried. The number of kilometers "ordered" by the City over the course of the 12 years is guaranteed and the fee paid per kilometer is calculated to be sufficient to pay back fleet loans, costs and profits. Achieving the point of transferring the BOC

to the taxi industry was a significant and major empowerment deal in the South African public transport sector.

What many of the reports fail to acknowledge is the seemingly inconsistent way in which the government conducted themselves. For a number of years government has made it clear that it would only speak to the taxi industry if they were united as a single industry entity. In response, SANTACO emerged as 'the' body, and government viewed any taxi with an operating license as a member of SANTACO. It is a minibus taxi and therefore it must be a representative of SANTACO. However, when SANTACO rejected government's offer, claiming that government "relegated the taxi industry to operations of the BRT business", and did not empower the industry in the entire value chain, the government's plans were in jeopardy. To encourage momentum, government continued with BRT talks, both with SANTACO and another partner that had members affiliated to the NTA. In fact, a Memorandum of Understanding was first concluded with Top Six Taxi Association, an NTA affiliate, before a similar agreement was signed with the Greater Johannesburg Regional Taxi Council, a SANTACO affiliate.

McCaul and Ntuli (2011) note that the BRT Phase 1a implementation "was a deal which benefited more than 300 individuals generally owning one or two taxis each, and did not rely on special privileges or larger shareholding for taxi association 'bosses'". There seems to have been a deliberate attempt to sidestep the 'single body' formerly sought by government. In doing so (local) government actually achieved buy-in since they followed a more bottom-up approach in dealing with associations, which is essentially a self-established organisation of individual taxi owners.

### 3.3. Integrated fare collection

While various public transport initiatives were being implemented, most notably the Gautrain Rapid Rail link between O.R. Tambo International Airport, Johannesburg and Pretoria and the BRT projects, Soraya Spadavecchia (2008) reports that an integrated fare collection system (IFCS) was being considered for the whole of South Africa. Contrary to existing proprietary payment systems of the time, the IFCS was to be open, interoperable and intermodal. At the time, it was envisaged that the taxi industry would be the most challenging public transport stakeholder to engage, yet Venter (2008) reports that taxis have already been fitted with card readers. Considering that taxis are inherently independent operators, the take-up of the new technology has been unexpected. Cokayne (2010) reports on the large-scale roll-out of the IFCS in the North West province.

As Bridgraj (2011) stated in the Absa (a major retail bank in South Africa and subsidiary of Barclays Bank PLC) media release, although the adoption of the new technology will be gradual, it is already gaining momentum. The *tap-and-go* payment method, as it is known, allows transactions of up to ZAR 200 per day and ZAR 3 000 per month. Tap-and-go cards are available through the retail bank branches. A cardholder may load a maximum of ZAR 1 500 on the card at any time. Not only can a cardholder pay for transport fares, they can also pay for low-value purchases in retail outlets.

As the adoption of integrated fare collection is ongoing, we note a number of (potential) benefits that can not necessarily be measured yet. For taxi drivers the risk of handling cash, the time taken to exchange change, and not being able to provide the required change are all addressed with the introduction of tap-and-go cards. The downside for the drivers, though, becomes the benefit of taxi owners. If fares are collected electronically, there exists a traceable record of the vehicle's real turnover, and owners could potentially plan and remunerate their drivers more appropriately having that knowledge. Why 'appropriately'? The current cash-based check-in amount required by owners has long been identified as one significant factor contributing to the generally unacceptable driving behaviour of minibus taxi drivers. Speeding and skipping of traffic signals is an unintended

consequence of the way in which the drivers are remunerated: the quicker a driver can get the occupants to their destinations, the more trips can be made, and the higher the drivers' unrecorded cash earnings. Although electronic fare collection will not be the sole solution for driver behavior, it does provide one such handle.

For commuters, not having to carry cash also reduces risk, and limits their exposure to ZAR 200 per day, provided that the card owner reports and stops a lost or stolen card immediately.

## 4. Managerial implication

It may be argued that local government, specifically the City of Johannesburg, operated outside its national mandate to deal only with the single officially recognised association, SANTACO. Having concluded the BRT negotiations in Johannesburg with the non-recognised NTA associations may seem inconsistent.

As identified by Venter (2011), one can attribute the taxi industry's "lurch towards formalisation" to either a) successful government intervention where a weak industry is forced through strong regulation; or b) the outcome of an internal reinvention driven by self-interest. We argue in this paper that the successes of the BRT and integrated fare collection, at least initially, is attributable to a fundamentally different way of approaching the taxi industry.

For too long has government been trying to influence the taxi industry following a top-down approach. Resistance came from a few extremely strong and influential factions, rightfully referred to as *taxi untouchables*, within the industry. It was critical to understand and appreciate the taxi industry as essentially a bottom-up entity: taxi drivers make a living by driving for taxi owners, who require decent returns on their investments. The owners make up the local associations and these associations make up regional, provincial and ultimately national bodies. A bottom-up approach allows decision makers and change agents the opportunity to successfully engage with the taxi industry, albeit at an initial slow pace. The pace may be slow as one needs to establish trust relationships with individuals, not faceless organisations.

Instead of forcing a recapitalisation process, buy-in was more easily achieved at a disaggregate level. In the case of the Johannesburg BRT, individual owners were involved and negotiated with, together finding a middle ground for cash flow issues. In the case of integrated fare collection, our local knowledge was confirmed by Bridgraj (2011) indicating that individual owners, operators (drivers) and associations were involved.

Venter (2011) argues that the taxi industry finds itself in the final stages of a growth S-curve and, looking for an escape from the limitations of informality, taxi owners and their respective associations are fertile breeding grounds for innovation. A mutually beneficial outcome is possible only if government, management and decision-making change agents understand the essentially local context of the planned intervention and adapt the intervention to accommodate the essentially bottom-up taxi community.

### 4.1. Future intervention opportunities

So how should government deal with the taxi industry? Being inherently a people-centered industry, the convenient answer may indeed be simply *'cautiously'* and *'it depends'*.

Changing the view of paratransit from one of being a problem—one that must be solved through forced formalisation—to one of being an essential part of the economy, both as mobility service provider and employer, is both valuable and necessary. Even if it remains semi- or completely informal. The culture surrounding the taxi industry is already changing. Holland (2011) urges other road users to consider the inherent value provided by the taxis.

In the case of South Africa, such a change in mindset from decision-makers is essential. Many of the low-income earners still remain on the periphery of large metropolitan areas and require low-cost transport services to participate in the economy. It is not economically viable for a government to consider providing fixed and costly transport infrastructure like rail (either light or commuter rail) or the more popular BRT, across such vast areas. In these areas the taxis are fulfilling an essential service to provide mobility. These taxi niche areas should be acknowledged by decision-makers, and actively promoted and developed instead of discouraged in an overall attempt to formalise the industry.

Government, for example, is often a key actor in driving housing development projects, especially in their role of housing provider fulfilling their mandate as stated in the nation's Bill of Rights. Unfortunately many of these housing projects are still on the periphery, reinforcing bad urban design of the former political regime. Indeed, government is aware of the challenge and acknowledge that transport and housing decisions must indeed be considered simultaneously.

So while the Departments of Housing and Transport are restructuring their functional silos, the flexible and emergent nature of the taxi industry can be put to good use. Little fixed infrastructure is required for the taxi industry to operate, especially when compared to dedicated rail infrastructure or the expensive pavement structures for heavy BRT vehicles. As the provision of housing either changes over time to become more closely located to employment opportunities, or government adopts a more multi-centered development approach in which employment opportunities are attracted and relocated closer to the residential areas (both of which are controversial and well-debated urban planning issues), the provision of taxi services can more readily be adapted. Since provincial government is mainly responsible for housing provision, taxi associations can individually and proactively be involved from the planning stages of the developments, ensuring that building contractors can easily access the developments, and once completed, so can the residents.

As the urban fabric changes over time, instead of abandoning costly infrastructure to the then hopefully sparsely populated periphery, the flexible taxis can be redeployed to new developments, or absorbed into the newly formed, and better located transit such as BRT.

Taxi subsidies are already discussed within government. A proactive approach can see a subsidy structure that do not reinforce the past, but rather outlines, favours, and rewards the responsive and agile nature of the taxi industry: one housing development at a time.

## 5. Conclusion

In this paper we provided a more comprehensive and people-centred context for the taxi industry. Although our contribution specifically focused on South Africa, we believe it is extensible to other developing and developed economies facing and viewing the incorporation of paratransit as a formal, tax-paying industry.

Promoting the taxi industry holds a number of scientific, social and political opportunities. Scientifically, state-of-art research already attempts to incorporate the behaviour of paratransit operators in agent-based transport planning models (Neumann and Nagel, 2011). Social and political awareness, and appreciation needs to be created to increase the accessibility of the minibus taxi industry and lower the barrier to entry. One example of creating such awareness is to document the commuter taxi hands signs. Woolf (2007) published 26 taxi hand signs for the greater Johannesburg area to assist commuters navigating the taxi network. Since 2010, these hand signs have appeared on the South African National Commemorative Stamp and more than 50 hand signs have been identified and are at various stages of being documented.

The technology required to educate (potential) users on hand signs is another scientific opportunity. Public transport maps and booklets employing hand signs may not conform to transit

networks and maps typically found elsewhere in the developed world, yet it is essential to convert the innovative yet tacit knowledge of what Terblanche (2006b) notes as "the amazing phenomenon that is the minibus taxi industry".

## Appendix A.  Taxi vernacular

In the 1980s drivers started using the panel-van model Chevrolet 48s as a taxi, even though the Chevrolet 70 would have been more suitable. Chapman explains that "the 48 only had 2 front seats, 2 middle seats and a back seat. My colleagues would always say 'we need something bigger than this, we can only fit twelve people in!' ".

Political commentary, heroes in society, fantasy or film, are similarly used by individual taxi operators who give descriptive or popular names to their vehicles, one of the very earliest being the *6 Mabona*, translated to *6 eyes*, a Chrysler with 6 headlights. Another car that became popular as a taxi was called *Nkomoziyo Phuza*, translated as *cattle go to drink*, reflecting the people commuting to and from work.

For their speed, they named the then popular Toyota 'Super 10' the *Zola Budd*, after the South African-born world champion, bare foot track and field runner Zola (Budd) Pieterse (b.1966). The main Toyota rival, an Isuzu, was nicknamed the *Mary Dekker* after the notorious and controversial incident at the 1984 Olympics 3000m race in which the then world champion, Mary Decker, stumbled and fell after a number of collisions with Zola Budd. Some township taxis are still sometimes nicknamed *Zola Budd*.

The nicknaming of taxi brands are consistent with the kind of narratives that also influenced the development of the taxi hand signs that summon the taxis. An innovative gestural travel language, taxi hand signs have emerged significantly in South Africa across diverse ethnicities and cultures and continue to develop within the taxi industry as taxi services emerge in newly populated areas. Taxi hand gestures are usually decided upon by communities in conjunction with the taxi driver who provides the transport for that area. The hand signs are unique in that they are created, used and learned by a multicultural commuting public, speaking many languages and coming from all over the country and beyond the borders of South Africa.

Hawkes (1997) finds parallels in Claude Levi-Strauss's (1908–2009) analysis of non-linguistic data and his "notion of myth-making 'poetic' wisdom". Narrative, myth and meanings associated with the taxi hand signs are vital elements in understanding the how, what and from where, the taxi travel language is situated, within the multi-faceted, multi-racial and multi-culturally mixed society of Gauteng. The taxi gestural lingo is supported by descriptions of place and based on narrative content that is both cultural, social and political. Even hooting, in various series of beeps, are used to communicate with potential passengers.

Some hand signs are interpretations of particular incidents that have occurred within the community or perhaps an event that has been reported in the media. One story in circulation is that after 2001, a well-known and apparently well-liked taxi operator from Marabastad in Pretoria, was abducted and murdered and his body parts used for *muti*, a term used for traditional medicine in Southern Africa. The hand at the top indicates a man's testicles, while the hand underneath is palm upward, which moves across in a cutting motion. While the sign is considered distasteful to many people who admired the murdered operator, many are unaware of the political controversy surrounding the use of the sign, precisely because signs are generally learned by word-of-mouth.

The taxi hand signal to the township settlement Orange Farm (Figure A.1b) is descriptive of the name as commuters use a cupped hand to describe an absent orange for this signal. Many taxi hand signs are geographically descriptive of a place. The forward movement of a hand rising and falling (Figure A.1c) describes the uneven ground in the poor, overpopulated area of Diepsloot that

developed after the apartheid years. A commuter wanting to catch a taxi to the nearest T-junction, simply makes a 'T' with one hand pointing upward and another across (Figure A.1d). To get to a train station, an elbow and hand movement that mimics a wheel is going around, is employed. Commuters who live in Kliptown, where a township has emerged near a huge rubbish dump protest by waving one hand left to right in front of their face to show that it smells bad and the other hand waves up and down to ask the taxi to stop! Some taxi hand signs are so commonly used that they have become established for particular destinations. For instance, the taxi hand sign to town, in most main cities in South Africa, is one index finger pointing upwards (Figure A.1e). Similarly, the sign to any nearby location, is a downward point using the index finger to trace an imaginary circle (Figure A.1f). A cupped, downward facing hand, indicates a shopping mall, the fingers each representing a variety of shops (Figure A.1g). The waving hand sign used for a journey from Tembisa to Sebenza (Figure A.1h) seems to indicate the direction of Sebenza, although like many hand signs, the exact meaning has not yet been established.
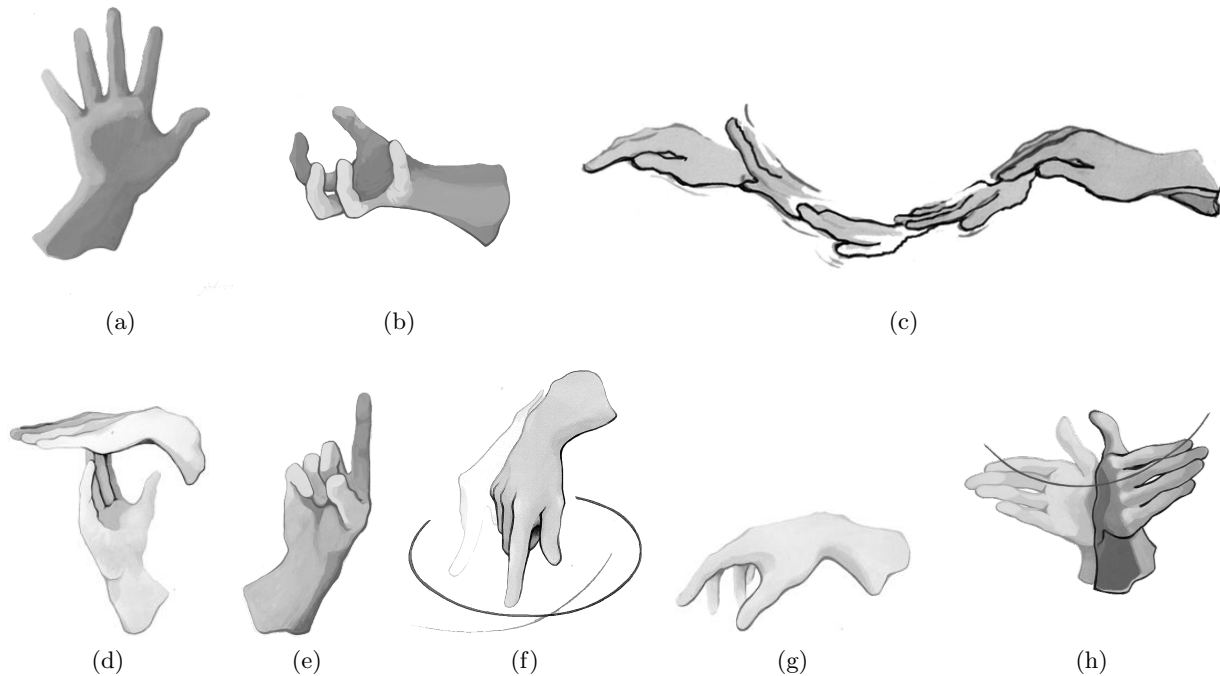


(a)          (b)                    (c)

(d)     (e)     (f)     (g)     (h)

Figure A.1: Selection of taxi hand signs (Woolf, 2007))

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