“Ya son pocos, los que siembran”:¹

Agriculture in San Antonio Palopó, and its Decreasing Perception as a Sustainable Livelihood

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¹ Spanish for “We are few now, those who plant.” (Victoriano, Interview Feb 22nd 2012)
Introduction

As you round the final bend on the twisting road into San Antonio Palopó, perhaps squeezed into the back of a pickup with a dozen men, women, and children of all ages chatting in Kaqchikel, the town’s white roofs gleam in the afternoon sun. Nestled against the east shore of Lake Atitlán, San Antonio is backed up against towering, steep hillsides. As the pickup bumps you closer down the road into town, the surrounding hillsides take shape. Golden patches of maize check the nearly vertical slopes, and in the two gullies that lead into the town from above, rows upon rows of stone terraces crowd towards these two water sources, clad in carpets of green onion shoots. The driver lays on the horn and the dust begins to settle as your pickup enters town. Looking to your right towards the lake, you see a new crop of houses that has almost finished crowding out the few remaining onion terraces. Men clad in traje, the traditional woven garments particular to each town, haul bags of cement and freshly broken rock to new buildings under construction. Hopping off your pickup and heading up the steep and twisting path to the town center among a throng of tourists, you pass a dozen shops selling traditional woven items, where women call out incessantly to every passerby, “¡Pasa adelante!”² Buy something, friend!” Looking upwards, the town climbs high above you, the highest buildings once again bumping into the scattered sets of terraces, fighting for space between the steepening slopes and the burgeoning town of about 4,000 inhabitants (Plan de Desarrollo Municipal: 9). Once a primarily agricultural town, San Antonio is well on its way towards other livelihoods.

² Spanish for “Please come in!”
Background Information

Maya Cosmovision

Since ancient times, agriculture has formed the basis for the livelihood, culture and worldview of the Maya people. “He’s a man of maize!” Cristobal exclaimed, clapping his cousin Victoriano on the back (Cristobal, Field notes Feb 14th 2012). The two were on their way back from their milpa (a subsistence plot growing primarily maize), a two hour walk from town. His casual utterance has a surprisingly literal basis. According to the Popol Vuh, an ancient K’iche’ Mayan text describing the mythical dawn of life of the Maya people, the first humans were sculpted from white and yellow corn (Tedlock: 84-85).

Using the case study of the K’iche’-speaking town of Santiago Atitlán, Carlsen and Prechtel discusses how the life cycle of the maize plant is mirrored in the K’iche’ concept of Jaloj-K`exoj. It is derived from the words jal, change over a lifetime, and k’ex, generational change—creating the new from the old. The myth of Flowering Mountain Earth, a maize tree from which everything in the world originally came, personifies this concept. The stump of the maize tree still sits at the world’s symbolic center. Versions of this agriculturally-derived concept have permeated all aspects of Maya life, from naming conventions and concepts of time to political and social hierarchy (Carlsen and Prechtel 2011: 47-71).

Leaving Agriculture in San Antonio: Broader Context

Despite the cultural ties that have bound indigenous Mesoamericans to agriculture throughout history, most people in San Antonio agree that the number of people in agriculture in the town is declining. The case of San Antonio is nested in a broader trend of growth of the market economy in Guatemala the past half century, particularly in the Lake
Atitlán area (Horst 1987: 2; Gutiérrez, n.d.). In his article titled “Atitlan: the dark side of economic growth”, Gutiérrez discusses the changes that come about “as the country folk became increasingly linked to the world commodities markets” (Gutiérrez n.d.: 4) Hawkins and Randolph also discusses the changes in livelihood brought about as agricultural communities are increasingly exposed and connected to the global cash economy (Hawkins and Randolph 2005: 53). Several studies claim that throughout the region, cash crops are supplanting the milpa, as farmers are pressured to transition from agricultural subsistence. Due to land pressure, traditional subsistence agriculture can no longer support a family, leading to further participation in the cash economy through cash crops and other livelihoods (Carmack et al. 2007: 350; Gutiérrez n.d.; Horst 1987: 1-3). In the case of San Antonio, the perception is that even cultivation of cash crops is being abandoned in favor of non-agricultural, wage-earning professions.

In my three weeks of research in San Antonio, I attempted to learn from farmers as much as I could about maize and onion cultivation as it is practiced today, in the context of ancient and traditional techniques. I also investigated how the people in San Antonio conceptualize the shift from agricultural to non-agricultural livelihoods that is happening in their town. What, in their eyes, are the reasons for this change? I discovered that while maize and onion cultivation remain a major part of San Antonio’s economy for now, farmers are losing faith in the land to sustain them as it has their ancestors. Fewer people are considering agriculture a viable livelihood, both because there is not enough land to produce adequate harvest, and because they no longer trust the remaining land to provide returns on the many investments necessary to ensure a productive crop. Consequently, people are leaving agriculture, either partially or completely, in favor of an increasing array of wage-earning and non-agricultural professions.
Methods

During my three weeks of field research in San Antonio, from February 13th through March 4th, 2012, I talked with a variety of maize and onion farmers living in the town, as well as people who did not farm. Many people, including farmers, had two to three additional professions, and most farmers had cultivated both maize and onions at some point. I accompanied or met several farmers at their onion terraces, and talked with others in their homes or other public spaces. I also had casual conversations with people I met day to day. I used a combination of observation, participant observation, informal conversations, and semi-structured interviews to collect information.

I ran into a limitation to my project almost immediately—I was a woman researching a profession that, in San Antonio, is almost exclusively male. Cultural customs made it inappropriate for a woman to be alone with a man outside the immediate boundaries of the town, which restricted my area of participant observation to farmers who worked within the town’s boundaries, unless accompanied by a friend. This also meant that I was unable to visit a milpa, as most are an hour’s walk from town, and I was not able to find a trusted farmer to take me. This restricted my knowledge of milpa cultivation to information gleaned from conversations. Consequently, the focus of my project turned from a more participant approach to one more focused on conversation. I found it somewhat difficult to form trusting relationships or engage in social activities with many of my informants due to gender roles ingrained in the town’s culture.

My study was also restricted by the mutually limited knowledge of Spanish of myself and my informants. Since Spanish was a second language for both parties, certain ideas were hard to communicate and may have been lost in translation. Additionally, my short time in San Antonio limited the number of people I talked to, and the depth of
relationships I was able to form with my informants.

Current Agricultural Practices

A faint halo of dust and hot afternoon sun surrounded the bent-over figure of a man, rhythmically tilling the dry ground with a hoe in firm, even strokes. As I approached the set of stone terraces where the dust was flying, the traje-clad figure straightened slowly, removing his straw hat, and raised a hand in greeting. “Hola señor!” I called out in response. “May I come up?” Looking slightly puzzled but smiling, the man responded, “Yes, of course!” (Pedro, Field notes Feb 14th 2012). Seeing his bare feet under the the brown woolen traje skirt he wore, I kicked off my sandals and scrambled up the rocks onto the terrace surface, corn stalks and spiral snail shells poking my bare soles. In the space of a few minutes, I was acquainted with my first friend and one of my key informants, 68-year-old Pedro. He was the first of many farmers and other townspeople who shared with me their knowledge of farming, and their reasons for the decline of farming in the context of changing times.

Milpa

Scholars of the ancient Maya have long accepted that the milpa system, referring to a slash and burn technique of shifting cultivation with a trinity of maize, beans and squash, was a mainstay of ancient Maya food production and is a central part of the Mesoamerican economy and diet to this day (Carmack et al. 2007: 348; Wilkin 1971: 432). Studies have examined the lowland milpas of the Itzá people in the Guatemalan Petén, and the complex

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3 Spanish for “Hello sir!”

Most people in San Antonio plant their milpas in aldeas4 above and over the hill from San Antonio, about an hour’s walk from town. Each location has its own micro-climate, and thus its own planting season to which farmers are finely attuned, a concept corroborated by Barrera-Bassols and Zinck (Barrera-Bassols and Zinck 2003: 235). Milpas are planted after the first rain, because the maize needs water to grow and depends on rains for this as the fields are not irrigated. First, last year’s dry stalks, left standing after harvest to hold the earth in place, are chopped down and worked into the soil with a hoe, as organic fertilizer. When the soil is ready, it is hoed into surcos5, and the maize seeds, either white or yellow (occasionally black, though this is less desirable and therefore less common), are dropped one by one into the furrow. After eight days, farmers clean the milpa of weeds, and again after about six weeks. Chemical fertilizer and insecticide are applied up to three times in the growth period6, which lasts from four to eight months, according to different farmers. Planting season varies from late February to early May.

Victoriano, a forty-six year old farmer and textile weaver, explained to me that farmers know when to harvest by inspecting the dryness of the leaves surrounding the cob of maize. When the leaves are dry enough, the next step is to tapiscar, a process that involves hitting the stalks with a stick to break them in half so the cobs hang down. The farmers harvest the cobs, and leave the stalks standing until the next planting season.

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4 Smaller settlements pertaining to the Municipio of San Antonio, of which San Antonio Palopó is the seat.
5 Local term for furrows
6 Fertilizer comes in small grains which are applied with bare hands. Insecticides are applied in a solution that farmers spray from a container carried on their backs. Minimal protection is used in either case.
Beans are planted in much the same way as maize, and have the same growing season. However, the concept of the agricultural trinity discussed by Carmack et al. is not used by San Antonio farmers. Although farmers told me that beans can be planted between the rows of corn, they stressed that the people of San Antonio were accustomed to plant them side by side in separate plots. Squash, the third part of the trinity, is not a part of the system.

Onions

Onions are the main cash crop of San Antonio, have been planted there as far back as living memory reaches, because the climate is right and people are accustomed to the crop. They are cultivated on sets of stone terraces, which can also support crops of radish, cilantro, yerba (general name for a variety of leafy greens), cabbage, carrots, beets, and azucena, a type of white flower. Bordering the terraces or scattered throughout the onions, one often sees chili, anise, tomilla (an herb), milpa (small maize plants grown for their leaves, which are used in cooking), and various flowers. These crops are sold in small quantities at markets around the lake, but mostly in cities on the Pacific coast and in the capital.

Like the milpa, the use of terraces for intensive cultivation has likely carried over from the ancient Maya, as evidenced by the discoveries of many sets of ancient terraces in the Maya lowlands, mostly built in the late Classic period (Beach et al. 2002: 390). Archaeological studies focus on lowland terrace sites (Beach et al. 2002; Beach and Dunning 1995; Kunen 2001), although two articles discuss ancient highland terrace sites (Hard et al. 1999; Rodríguez 2006). Research has focused on the use of terraces as a more
intensive system of cultivation used to feed a growing population (Beach et al. 2002; Kunen 2001; Wilkin 1971).

Terraces then and now offer a solution to the problems of farming on a slope. They providing a deep, level planting bed and prevent soil erosion and nutrient loss. Terraces allow water to absorb rather than running off, and the porosity of terrace walls facilitates drainage. Thus, terraces allow for maximum root development, soil nutrient quality and water management (Kunen 2001: 326, Beach et al. 2002: 335).

The specific type of terrace used in San Antonio is called a tablón, and is unique to the department of Sololá, where San Antonio is located. Wilkin describes the tablón as an irrigated vegetable planting bed, varying in size and shape depending on its position on the hill slope (Wilkin 1971: 435). I found this to be a very accurate description of the tablones in San Antonio. Sizes appear to ranged in length from dozens of meters to several feet, and widths varied just as much. Most are constructed of mud and rocks in varying proportions, sometimes mixed with pine needles, other plant material or trash for added strength. As José, a 60-year old onion farmer told me, the best tablones, called *muro seco* (Spanish for “dry wall”), are made of stones, not mud. They are superior because they drain better and are more durable than those made only of mud, which drain poorly and break easily. Even *muro seco* tablones take constant maintenance, from fixing broken rocks to pulling ever-present weeds from between the cracks. Most farmers claim to have constructed the tablones themselves, although one farmer said his tablones were on the land when his father bought it seventy years ago.

Almost all sets of tablones are irrigated with a gravity system of pipes and channels that direct from one of two natural water sources above the town to the tablones. Water flows in horizontal ditches behind the tablones, and farmers say it hardly ever runs dry (See
Appendix A for diagrams of tablones). However, some tablones have no access to irrigation and water must be sprayed on with a bomba, a plastic canister worn on the back, with a rubber hose attached.

To prepare the tablones for planting, the soil must first be tilled with a hoe. Most farmers add a combination of old corn stalks, plant brush, weeds from the tablones, snail shells and other basura (Spanish for “garbage” but referring here to organic waste, such as food scraps), as organic fertilizer. When the earth is tilled, the farmer takes a handful of black onion seeds barely bigger than a pin head, and shakes them evenly over the soil in a downward motion. He then lays a thin layer of soil over the seeds, and waters them. Next, the farmer spreads a bed of pine needles over the new seeds, to protect them from the wind and keep in moisture. These needles are removed after eleven days, and can be reused four times.

The seedlings then grow for two to three months. During this period, the seedlings are watered every three days. The farmer dips a plastico (round plastic container of various sizes, ubiquitous in San Antonio) into the channel behind the tablón and throws the water on by hand. Twice in three months, chemical fertilizer and pesticides are applied, and the beds are cleaned of weeds. When the seeds are ready, the farmer pulls them all up by the roots and shakes off extra dirt. As soon as possible so they don’t dry out, each small onion plant, just a few green 5-inches shoots with small white roots, is poked with a finger into the soil of a newly cleaned and tilled tablón, about three inches apart in straight rows. The plants are watered, fertilized and weeded in much the same way as the seedlings, and grow for 1.5-3 months, after which they are harvested, cleaned, and either sold to a market vendor or taken to market by the farmer or his family.
A few tablones are planted for seed. These onions grow continuously without transplantation for seven or eight months, and reach a height of up to two feet, with round white tops. When the tops are dry and yellow, farmers pull up the plants and hang them by handfuls from the rafters of their home until the seeds dry further. Then, rubbing the heads between his palms, the farmer removes the husk and exposes the small black seeds, ready to be planted again. As indicated in Wilkin indicates, the tablones are in constant cultivation with a short fallow period of only twenty days (Wilkin 1971: 434).

**Losing Faith in Agriculture: Security of Land vs. Security of Wages**

Although the techniques described above of maize and onion cultivation are still a central part of the economy and life of San Antonio, almost everyone will tell you that there are less farmers now than there used to be, and that this trend is continuing. In reference to agricultural subsistence strategies, Carmack et al. claim,

> With growing populations, changing ecological conditions, and the intensification of the global economy, relatively few Mesoamerican households now have the land needed or the interest in maintaining this traditional agricultural system. (Carmack et al.2007: 350).

Given that this shift is indeed happening in San Antonio, I identified several reasons why people are losing their faith in agriculture as a viable livelihood. First, there is not enough land to support the growing population, and second, the remaining land can no longer be trusted to return on its investments. In the next sections, I will discuss people’s conceptions of land scarcity, the investments made in the land, and reasons that people are losing trust in these investments to provide adequate returns.
Land Scarcity

“Look how the town is climbing!” my friend Maria exclaimed, gesturing with her free arm, the other loaded down by scarves she was about to sell to a gaggle of camera-toting tourists in front of San Antonio’s Catholic church (Maria, Field notes Feb 19th 2012). She was right, I thought, gazing up to where she pointed. Newly constructed houses hugged the steepening hillsides at the edge of town—testaments to a growing population, testing the limits set by nature. Increasing scarcity of land is a theme that came up in every conversation I had over the course of my project. The old folks tell many stories, said Christina, a busy and engaged mother of five. They talk of a time before western medicine came to the town, when there were far fewer people and everyone had enough land. They grew more back then—maize, coffee, onions and all kinds of vegetables.

Roberto, a 35-year old ceramics painter and father of three young children, gave me a few more details as I sat in his kitchen one evening. “There isn’t much land anymore,” he began our conversation, between bites of tortilla and black beans, “and what there is, is far away. People used to have two, three, four cuerdas of land, now some have less than one for a whole family. This barely gives anything.” (Roberto, Interview Feb 27th 2012). Where this house is standing, tablones used to line the lake shore. Now, most have been swallowed up by houses. As Ramos, a 38 year old farmer and one of my key informants told me, “The earth doesn’t keep growing every year. But the people, they do.” (Ramos, Field notes Feb 17th 2012). Due to finite land and a growing population, people no longer have adequate land to provide for their families through agriculture.

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According to various informants, a cuarda is between 18 and 32 varas. A vara is around 33 inches. According to Carlsen, “The cuerda is a pre-Conquest Mayan unit of measurement (mentioned in the Popol Vuh)... The term comes from the word kāam, which means “cord”... The cuerda is not a standard unit... [It] most often refers to 24, 28 and 32 yards.” (Carlsen 2011: 143).

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Investments

You have to invest, invest continually in your crops--this is a refrain I heard repeated by the farmers I talked to. Farmers have to make many expensive investments in the land with hope that it will provide a return in the form of crops to eat and sell. I identified three key investments: land, labor, and fertilizer.

**Land:** Everyone agrees that land is expensive to buy and rent, and is becoming more so as it grows scarcer. According to Roberto, about sixty percent of people who farm in San Antonio have their own land, and the remaining forty percent of farmers rent, mostly from local people who have moved on to other professions or are working in other places. Land with easier access and better cultivation potential is more expensive, meaning that in order to ensure good crops, farmers have to invest even more in their land in the first place.

**Labor:** “Harder, harder!” Pedro coached me, as I hacked at the dry ground of his tablón with a hoe, “This is hard work.” (Pedro, Field notes Feb14th 2012). He was right. My arms tired out after a few strokes, and Pedro had been working all day. Regardless of farmer or non-farmer status, every one of my informants stressed to me that farming is hard work. Learning about farming techniques in detail had taught me just how much labor farmers invest in their crops, and if that wasn't enough, I was told in words as well.

**Fertilizer:** Fertilizer is an investment that has changed in nature over the past 50 years since the introduction of agrochemicals to the region in the late 1950’s. As David Carey Jr. explains in his article titled “Clash of Two Worlds,” which is an ethnography of the effects of agrochemicals on Kaqchikel farmers, chemical fertilizers increased agricultural yields in a time of food scarcity. But “while some Maya hail chemical fertilizer’s immediate effectiveness, many lament the long-term deterioration of their… economic stability.” (Carey n.d.: 1). Farmers are caught in a chemical fertilizer trap,
claiming that their crops won´t grow without the fertilizer now, and each year it is more expensive and more needs to be applied (Carey n.d.: 1-4). My conversations in San Antonio corroborated literature on the subject (Carey n.d.; Fisher and Benson 2006; Gutiérrez n.d.). As Pedro related to me, “The crops don´t grow without chemicals anymore, because the earth is used to them. Organic fertilizer stays in the soil, but the chemicals are gone after a year, and you have to apply them again... It´s always getting more expensive.” (Pedro, Field notes Feb 29th 2012). The claim that fertilizer prices are constantly rising was agreed upon by all my informants. Victorian told me, “Chemical fertilizer is good because the earth gives more, but it’s too expensive. I can´t afford to plant tomatoes anymore.” (Victoriano, Interview Feb 22nd 2012).

Investments: no longer worth the risk

A few of my informants still hang onto their faith that the land will provide for them, although they acknowledge why fewer and fewer people do. “If you have land, you can always plant something so that you can eat” said Ramos (Ramos, Interview Feb 19th 2012). On the question of whether it is better to plant a milpa or to buy maize, Eustaquio, a 60 year old farmer, answered, “It is better to farm because when you harvest, you have your maize. If you have to buy it, what if you have no money?” (Eustaquio, Interview Feb 21st 2012). However, my informants who still considered land as their security were in the minority. José turned the conversation to the other side of the issue. “It is better to plant because there is no bill, and buying maize is expensive. But you have to keep investing and investing, and sometimes the crops don´t grow--then, you´ve lost everything.” (José, Interview Feb 28th 2012). Due to an increasingly unpredictable climate and the overuse and
abuse of land, the prospect of losing everything is becoming more of a reality—a risk increasingly fewer people are willing to take.

**Climate:** Weather is most often the factor that decides whether or not the land will provide a return on its investments. Unfortunately, in light of global climate change, the weather has become increasingly unreliable. Over and over I heard that the rains are irregular now. They don’t last as long, but are more powerful—strong enough to flatten a milpa, ruining the year’s crop. The same is true of the winds. And if the rains stop while the milpa is still young, it may not grow at all.

**Overuse:** Overuse of land is less an immediate concern, and more a concern for the future. When I asked Ramos if the land has to rest between harvest and the next planting, he leaned back against the tablón wall and peered at me from under his straw hat. Pausing in thought, he responded, “Just as a man who has walked far or carried a heavy load has to stop and rest for a few minutes to regain strength, the land also has to rest—for onions 20 days, for the milpa, a year—but no one has land anymore to do this. They can’t let the land rest.” (Ramos, Field notes Feb 17th 2012). Domingo corroborated this claim, telling me that he knows the land needs to rest, but his family doesn’t have enough tablones. They have to replant immediately after the harvest. He worries that earth is getting tired.

**Abuse:** In addition to overuse, the land is also suffering abuse by chemical fertilizers. Every farmer I talked to told me that agrochemicals “burn” the soil, which once again replicates the findings of literature on this subject (Carey n.d.; Fisher and Benson 2006; Gutiérrez n.d.). People used to use only organic fertilizer—household, agricultural and animal waste—to fertilize their fields. Farmers say that this type of fertilizer refreshes, maintains, and gives back to the soil. “The onions were stronger back then,” Pedro told me (Pedro, Field notes Feb 18th 2012). Now, due to lack of land, almost no one in the town has
animals, or space to compost, making quality organic fertilizer hard to find and expensive to purchase. People are limited to what they can get their hands on—mostly dry brush, old corn stalks, and weeds (Carey n.d.: 18).

The overuse and abuse of the land is causing farmers to worry about the future productivity of their crops. “Now one day, the earth won’t give anymore food, because we haven’t maintained it,” Ramos worried (Ramos, Field notes Feb 19th 2012). But even when the land returns on its investments and crops grow well, the result is not necessarily good. Felipe and his son Domingo, who farm tablones together as their only source of income, repeated over and over that onions are very cheap, and for all the work they do, they make very little. Fernando (my 31-year old host father, Domingo’s younger brother and owner of a successful ceramics shop) agreed, saying “My father and brother? They make very little. They barely make enough to eat.” (Fernando, Field notes Feb 27th 2012).

Security of Wage Labor and non-agricultural livelihoods

Many of my informants attributed the decrease in farming to an increasing diversity of jobs. Due to the reasons discussed above, hardly anyone in San Antonio is just a farmer anymore. In fact, I found that most people have upwards of two or three jobs supporting them, such as weaving for the cooperative, working construction, or driving a pickup. For people who still farm, it is now a component in a myriad of income-generating activities. “The young people now, they don’t want to go to the fields to work, because the work is hard. There are other types of work that they prefer,” Victoriano explained (Victoriano, Interview Feb 22nd 2012). José summarized a theme I had been hearing, “People want to make money. They want jobs with steady and dependable pay, monthly wages. There are
more of these jobs available now.” (José, Field notes Feb 27th 2012 ) His sons don’t work in agriculture anymore, he told me. One is a taxi driver, one works construction; others work for institutions in big cities. I asked him if this made him sad. Not answering directly, he paused for a second and responded, “They are doing well... they are doing well.” (José, Field notes Feb 27th 2012). As my host father Fernando put it, “Even during a storm, I still have my artesanía.”8 (Fernando, Field notes Feb 27th 2012).

**Conclusion**

In the context of globalization, expansion of the market economy, and population growth, people in San Antonio conceptualize these changes in very distinct ways. Land scarcity, decreasing trust in the remaining land, and a widening array of jobs is causing San Antonio’s residents to leave agriculture behind, moving on to new sources of income, because they no longer see an agriculture livelihood as viable. As these worldwide trends intensify, it is only likely that the local trend away from agriculture in San Antonio will continue. People are shocked when I tell them that Americans don’t eat tortillas or plant milpas—these are things the people of San Antonio are accustomed to, the way things have always been done. Yet, even as these words are uttered, the agricultural center of the Maya worldview is becoming increasingly less trustworthy, less able to sustain its people. What this deterioration of their central worldview concept will mean for the Maya people is something only the future holds.

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8 General term describing hand-made products sold primarily to tourists, in this case referring to ceramics.
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