



Typography in Publication Design

Typography as a Graphic Design within Official (Governmental) Valuables – Case Study of the Botswana's new set of Bank-notes

Bank-notes as Publication Design

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Abstract: An official or governmental valuable is a term which covers all money representing documents issued by officials of the country. It includes paper bank-notes, coins, post stamps, revenue stamps, governmental bonds, government cheques and other security documents, etc. Here we can include bank cheques and today SIM, credit and debit cards (even bank cheques and cards are issued by private institutions - banks, etc.).

From its independence up to day, Botswana had only two set of bank notes, from 1976 and 2009. Comparing these two sets, with time difference of more than 30 years, this paper is trying to find differences and advantages between them. As it is logical to expect, security features of the new set were much more advanced. But what is with design? And especially what is with typography? Are design of the pictures, background, letters and numbers, advanced at the second set, or it is step backward comparing the previous one? Analyses include majority of the design elements - line, shape, texture, colour, size, as the design principles - unity and variety, hierarchy, proportion, scale, balance, rhythm, repetition, proximity, etc. also were analyzed - composition, contrast, subject/background relationship, essence, personal style, etc.

The paper discusses comparison of those two sets with accent on the design components. And it shows another truth that good design is in the head and hand of the designer, not in better or worst equipment.

Key words: typography, graphic design, official valuables, mass production printing.

1. Introduction

An official or governmental valuable is a term which covers all money representing documents issued by officials of the country (Government, or some of their agencies - Central Bank, Reserve Bank, Post Office, etc.). It includes paper bank-notes, coins, post stamps, revenue stamps, governmental bonds, government cheques and other security documents, etc. Here we can include bank cheques and today SIM, credit and debit cards (even bank cheques and cards are issued by private institutions - banks, etc.). Personal identity documents are also printed items issued by Governments, but we will not include them here as they do not have material value. Every country print them as usable items for everyday life, but also as a proof of its sovereignty.

Comparing these two sets, the paper is trying to find differences and advantages between them. As it is logical to expect, security features of the new set were much more advanced. But what is with design? And especially what is with typography? Are design of the pictures, background, letters and numbers, advanced at the second set, or it is step backward comparing the previous one? Analyses include majority of the design elements - line, shape, texture, colour, size, as the design principles - unity and variety, hierarchy, proportion, scale, balance, rhythm, repetition, proximity, etc. also were analyzed - composition, contrast, subject/background relationship, essence, personal style, etc.

Even as the new set came as development from the old one, analyze shows the majority of the design components were on the much higher quality in the first one. Also comparison with the other countries' bank-notes shows many copied elements and imperfections. Typography followed this principle. Accent given to numbers clearly shows that even today we have much better techniques and equipment, thirty years old design prevailed. And that show another truth that good design is in the head and hand of the designer, not in better or worst equipment.

2. Historical background of the money and paper bank-notes

History of the money is old as the history of the organized human life. During agrarian revolution, approx. 9.000-11.000 years ago, humans left their life of hunting and gathering, and started with agriculture. That request living at one place, usually near their farm fields, and stop roaming around waste areas. Living at permanent settlement leads to specialization within population and production of the extra commodities, including food,

tools, armories, etc. Logical step forward was trade. Use of the barter-like methods soon became insufficient and non-adequate for growing economies of the first states and trade within and between them. Need for the money was born.

The oldest monetary basis was for agricultural capital: cattle and grain. In Ancient Mesopotamia, drafts were issued against stored grain as a unit of account. A "drachma" (name for "money" in ancient and contemporary Greek language) was a weight of grain. Japan's feudal system was based on rice per year - koku. Many cultures around the world eventually developed the use of commodity money. The shekel (even today, name of the monetary unit in Israel is Shekel) was originally a unit of weight, and referred to a specific weight of barley, which was used as currency. Societies in the Americas, Asia, Africa and Australia used shell money - often, the shells of the money cowry (*Cypraea moneta* L. or *C. annulus* L.). In some cultures semi-precious stones, like obsidian, were used as money. According to Herodotus, the Lydians were the first people to introduce the use of gold and silver coins. It is thought by modern scholars that these first stamped coins were minted around 650-600 BC.



Figure.1 Two of the first metal money - Coins from Lydia, one-third stater made of electrum (natural alloy of gold and silver)

After some time, system of commodity money evolved into a system of representative money. Bank, merchants or merchants' organization issued receipts for commodity (metal) money deposited at them. Those papers receipts soon became a mode of money which had a value written on it, and were easy to manipulate (to carry, travel with, or use as a mode of payment). This first paper notes were developed in China in the Tang Dynasty during the 7th century. Its roots were in merchant receipts of deposit during the Tang Dynasty (618-907), as merchants and wholesalers desired to avoid the heavy bulk of copper coinage in large commercial transactions.

The first real paper money was introduced in China too, during Song dynasty (960-1279). These banknotes, known as "jiaozi", evolved from promissory notes that had been used

during Tang dynasty. However, they did not displace commodity money, and were used alongside coins. That was notes where amount written on it was guaranteed by state.



Figure.2 Huizi, deposit receipts, rudiment note from the Tang Dynasty (618-907 AD)



Figure.3 Jiaozi, the first paper money from the Song Dynasty (960 - 1279 AD)



Figure.4 French paper-note from time of the French revolution, 1791

In the 13th century, Chinese paper money became known in Europe through the accounts of travelers, such as Marco Polo and William of Rubruck. Soon, commercial banks started issuing paper receipts as promissory notes. During seventeenth century, the first paper money was issued in Europe, at Sweden and Scotland. France, under Louis XIV adapts paper money as the main currency, and on 1701 the first French paper money was issued denominated in livres tournois. This led to wide use of the paper notes all around the world. Economist, as John Law and other, established theoretical justification for the paper currency system.

However, many countries due to reasons in or/and out of their control, issued so much paper money that it lost its value and lead to hyper-inflation and collapse of the country economy (e.g. France after French revolution, Germany and Hungary after First World War, or Zimbabwe between 1990's and 2010).

3. Historical background of the Botswana bank-notes - The First set

From its independence up to day, Botswana had only two set of bank notes. The first period after independence, from 1966 up to 1976, Botswana were using the Rand of the South African Republic as its own currency. The first set came on 23rd August 1976, when the first Botswana's notes were issued. The set contents 1, 2, 5 and 10 Pula (Pula is the "rain" on Setswana, local language). Note of Pula 20 was introduced on 16th February 1978. Latter were added 50 Pula (29th May 1990) and 100 Pula (23rd August 1993). This set was re-printed several times, by different security printer companies, but with only minor changes. When President Sir Seretse Khama died on 1980, Bank of Botswana started with adapting bank-notes - instead portrait of the President Khama, it was with portrait of the new President Quett Ketumile Joni Masire. Similar changing occurred on 1998, when President Masire stepped down and was succeeded by the then Vice-President of Botswana, Festus Mogae, who became the third President of Botswana. During his time, new approach was adopted. Instead of the showing current President's portrait on all notes, Bank of Botswana started with President's picture on the lowest note (10 Pula), and on others were portraits of other important people from Botswana's history. On 20 Pula was portrait of Mr. Kgalemang Tumedisco Motsete, one of the foundation fathers of the country and its independence, and composer of the national anthem. On 50 Pula was portrait of the first president Sir Seretse Khama, and 100 Pula note is showing three great tribal chiefs, Khama the III, Bathoen the I and Sebele the I.

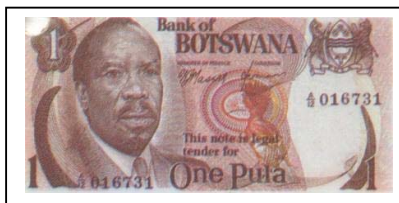


Figure.5 Pula 1 note from the first Botswana set (1976)



Figure.6 Pula 2 note from the first set, Portrait of the first president



Figure.7 Pula 5 note from the first Botswana set (first edition), portrait of the first president



Figure.8 Pula 5 note from the first set (second edition), second president



Figure.9 Pula 10 note from the first Botswana set (second edition), portrait of the second president



Figure.10 Pula 10 note from the first set, (third edition), third president (drown)



Figure.11 Pula 10 note from the first Botswana set (third edition), portrait of the third president

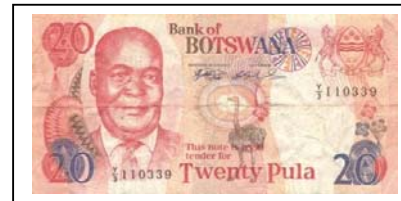


Figure.12 Pula 20 note from the first set, (third edition), portrait of Mr. K. T. Motsete

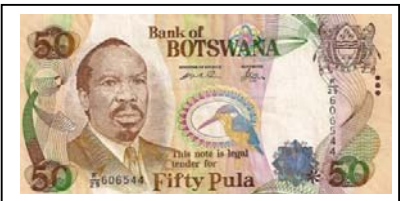


Figure.13 Pula 10 note from the first Botswana set (third edition), portrait of the first president



Figure.14 Pula 100 note from the first set (third edition), three tribal chiefs

This set characterized often changing of the printer, several changings in the portraits (the first, second, third president, some important people), but constant design of the note. Colours, fonts, numbers, typography, details, were not changed. Also, all the time, quality of the print was on the highest level, as the quality of the paper used for print. Only variation in quality started to occur with last print of the 100 Pula notes (part of the notes issued 2004 and 2005 issue), with low quality of the print colour and very poor hologram.



Figure.15 Comparison of the Pula 100 notes showing poor printing (colour and light)

The first set was printed several times at different printers. It started with Thomas de la Rue (1976), continued with Harrison and Sons, South-African state printer SABN (1997, only for 20 Pula note with new portrait of Mr. Motsete), Francois-Charles Oberthur Fiduciaire (1998), again De la Rue (2000, 2002, 2004 and 2005), return to Francois-Charles Oberthur Fiduciaire (2004, 2005, 2006). It is interesting to highlight that majority of the issues do not have year of issue, and some of them nor either name of the printer company.



Figure.16 Comparison of the Pula 50 notes with and without printer's name

Colours of the notes were consistent all the time. Only variation was adding blue (ultramarine) details on the 20 Pula notes on the second issue with portrait of the Mr. Motsete on reverse side. Previous issues (with president Masire and the first issue with Mr. Motsete) were red/carmine in colour on the reverse, and red/carmine with ultramarine details on the face side.

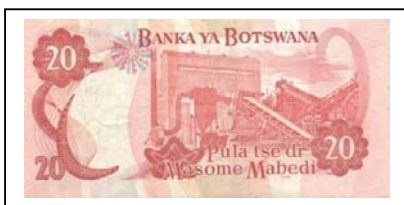


Figure.17 Pula 20 note from the first issue (SABN print), red/carmine colours



Figure.18 Pula 20 note from the latter issues, with ultramarine details

4. The Second set

Second set came in 21st October 2009, the same day when the first Botswana Pula set was launched 1976. Its design was highly based on design of the previous one. It contains 10, 20, 50, 100 and 200 Pula. Motives were preserved from the last issue of the first set, colours too. All, except the P200 note which was not issued previously and has purple colour with blue and green details and showing work of a woman teaching pupils. At the reverse side is a picture of three of zebras at a water point.

Security elements were enhanced and comprise from two watermarks (zebra on all notes, plus amount of the note), intaglio print, metal thread, hologram line, relief dots for blind persons, use of the paint which change colour due to angle looking, gravure preventing from scanning, etc. The newest security features were applied.

New is colour composition - introduction of the second colour and enlarge areas with other colours which were only in details. Also, composition of the elements on the note is slightly changed, as well as typography - font of letters and numbers.

Designer decided to use italic letters and numbers, which is not so often use in bank-note design.



Figure.19 - 23 Second set of the bank-notes 2009 (averse)

5. Comparison of the first and second set - Production (printing) aspects

Within production aspects, we will analyze paper, consistency of colours, metal thread, holograms and consistency of cuttings (position of the motives on single note).

5.1 Paper

The first set of notes was made from the very high quality paper. These notes could be used few years without any problem. On the circulation someone could find notes older than ten years still in acceptable condition. The highest denomination (100 Pula) was made from the paper with silk threads.

The second set is made from the lower quality paper. Life span, especially for notes of the smaller denominations (10 Pula and 20 Pula) is less than six months. Due to quality of paper, security metal thread started coming out, what was not a case with the first set. Bank of Botswana recorded it and trying to solve problem with much faster changing of the notes in market.



Figure.24 Second set- new note and note after six months in usage

5.2 Consistency of colour

Colours of the first set were simple, very clear so easy to recognize, and printed with very good pigments, so consistency was good. Only exception was last issued note of 100 Pula where in a part of the circulation was light colour difference (see figure 15). At 50 P notes, we have at the part of the circulation difference at the colors continuity.

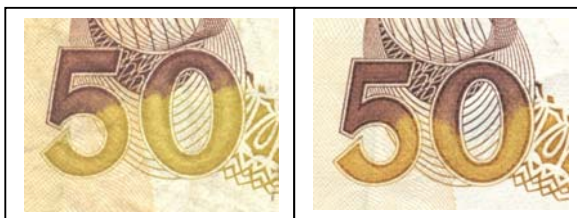


Figure.25 Variation of the colours continuity at the first set - 50 Pula note

To enhance and strengthen security measures for counterfeit prevention, every note of the second set has one main, prevailing colour, and few more secondary colours. At the note of 10 Pula the main colour is green. But, there is large area with ochre, light blue elements, light violet and dark brown details. Also, prevailing green is not uniform - here are four different greens - grass green, blue-green, olive-green and gray-green. Very dark green, almost black, is present to highlight, as pure black is non-used. As it is standard with money, colours are designed not only to overlap, but also to continue each other. Combination of the several colours showed its weakness within mass production.

Also, the main colours vary a lot. At all notes, it is possible to find colour differences, but with 200 Pula note that is the worst. It look like that the printer, De la Rue, couldn't find enough quantities of the right lily-violet paint. Every bunch of the notes has different nuance of the main colour. It varies in all three dimensions of the colour - hue, saturation and light.



Figure.26 Lack of the continuity of the colours (continuity of the gray and violet is not at the same position). Second set - 200 Pula note



Figure.27 Variation of the colours light at the second set - 200 Pula note

5.3 Security measures - metal thread and holograms

Every bank-note has several security features to protect them from the counterfeit. Here we will focus only to metal thread and holograms.

Metal thread is accomplished within bank-note paper pulp during finalizing paper production. Due to quality of the paper, strength of the metal thread can vary. At the first set of notes this was not a problem. With second set it is. After some time, as paper is losing its elasticity and strength, metal threads started coming out (see figure 24).

The first set has solo hologram at 50 Pula and 100 Pula notes (late issues, from 2004 and 2005, printed by the De la Rue). At the part of the circulation these holograms started losing their tri-dimensional look (see figure 15).

The second set has hologram as a ribbon on the whole part of the note, just right of the center, on the 50, 100 200 Pula notes. At small part of the circulation of the second set, hologram started to separate from the note. Also, some notes came to market with protection folio still on the holograms.

5.4 Consistency of cuttings (position of the motives on single note)

Both sets were designed with notes in continuity. Bottom part of the note is at the same time top (beginning) of the next one. This made cutting much easier and help to avoid problems and mistakes during cutting process.

And with minimal deviation, both sets have good cuts.



Figure.28 Second set 200 Pula note, averse and reverse- Vertical continuity of the notes



Figure.29 Second set 200 Pula note, avers and reverse- Horizontal continuity of the notes

6. Comparison of the first and second set - Design aspects

During this analyze, paper will focus on the design principles and elements. If we accept standard list of the design principles (Primary principles - unity and variety, hierarchy and dominance, perspective and proportion, balance; and Secondary principles - scale, emphasis, rhythm and movement, focus and proximity, repetition) and design elements (Formal - line, value, size and volume; and Tangible - shape, space, texture). Also, we have to take in consideration: contrast, accurate portrayal of the theme (background), subject/background relationship, essence, look at the whole picture and personal style of the designer. From typographical elements, paper will focus on letters and numbers (font, proportion, lines).

6.1 Comparison - Design principles and elements

Designers of the second set tried to follow basic design from the first set, what was one of the Client's main requests. Motives from the first set were preserved, as the organization of the elements on the note. Portrait of the current president (or other important person) is on the left side of the avers on the both sets. Central part was occupied by Governor's and Finance Minister's signatures at both sets. Difference started here. At the first set, under signatures is picture of the bird (different at each note - from woodpecker, kingfisher, ostrich to fish eagle). At the second set, there is only a small vignette with heads of the different animals, landscape or diamond. At the right side of the note are state's coat of arms and number of the nomination. Between them is empty space for watermark. All those details are reduced in dimension at second set, to allow larger space for the watermarks. Unfortunately, this brake balance of the whole picture. Reverse side is even worse. At the first set there were three angles with denomination of the note in

numbers. Now, there are only two. It made complete imbalance of the reverse side. Right side is very heavily with picture, ornaments and denomination. Left side is almost empty. Small vignette and number cannot fill whole space.

Looking at hierarchy and dominance, both sets have well organized avers sides. Portrait of the current president, or some important persons, strongly dominate on the whole picture, both averse and reverse.

Scale, emphasis, focus and proximity are very similar at the designs of the both sets. Rhythm, movement and repetition usually are not so strongly present at the bank-notes design.

Also, within Design elements is not so big difference between design of the first and the second set.

6.2 Comparison - Composition aspects

If we compare contrast of the first and second set notes, we could see that contrast of the first set is much more in balance. Light distribution is controlled, as the colour contrast. Note is looking cool and calm. At second set, contrast is very high, and almost without any balance.

Subject/background relationship is based only on meaning and association (Current president - Parliament building). But even this is not in order to the all notes (Three tribal chiefs - Modern diamond production; Education - Zebras at the water point?). Colour combination at the main subject - Background relationship is not adequate.

Analyzing composition of the different parts of the whole picture, at the second set, the main element (portrait of the president or some other important person) look as just added on the note. There is no effort to incorporate it in the picture and/or to organize it to be in accord with other elements/parts of the whole picture. Different colours just highlight this inadequacy and lack of effort.

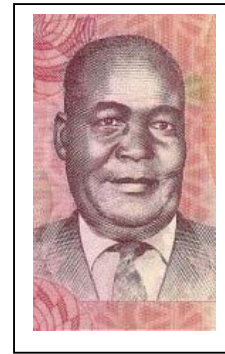


Figure.30 Lack of incorporation of main element into the whole picture- Pula 20 note, second set

Figure.31 Lack of incorporation of main element into the whole picture- Pula 20 note, detail

Situation is the worst and the most visible at 100 Pula note. At the note from the first set, the end of the main portrait (three great chiefs) is slowly disappearing and become part of the background. At the second set, the same portrait is strongly cut and just added on the main picture, like beginner's first work with Photoshop. Portrait is finished with a silhouette of the three chiefs, but cutting big part of the Sebele's body (his right leg and part of the main body). For this is difficult to find justification. Designer had the first set and could use it.



Figure.32 Pula 100 note from the first set

Figure.33 Pula 100 note from the second set

6.3 Comparison of the first and second set - Colour(s) aspects

Part of the main brief was to maintain the prevailing colours from the first set (green for 10 Pula, red for 20 Pula, brown for 50 Pula and blue for 100 Pula note). This was respected only partly. The main background was in the same colours on the avers, but the main portrait and big part on the avers has different, changed colour. At the second set, every note has four or more colours, and each of them in few different shades and nuances. Instead to make bank notes more interesting, this multi colour confusion just killed beauty and balance of the notes.

To make situation worst, some of the colours have to be repeated. Situation is the worst at the reverse of the 20 Pula and 50 Pula notes. Both have some brown areas on the edges, which could make confusion during usage.



Figure.34 Pula 20 note from the second set

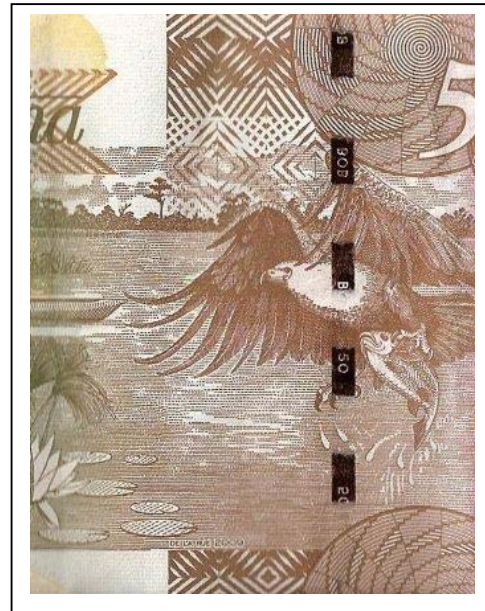


Figure.35 Pula 50 note from the second set

6.4 Comparison - Typography

At the first set, font of the numbers (typo) was interesting and designed for this occasion. It is visible that designer spent a lot of time and effort in designing (see figure 25).

Numbers at the second set (the same as the text - letters) are done in italic. Full design is just a copy of the Israeli new sheqalim bank notes (2008 issue). Only difference is that on Israeli bank-notes only numbers are in italic, and at Botswana second set - whole text, numbers and letters, are italic.



Figure.36 Pula 20 note from the second set (2009) - Numbering



Figure.37 Israeli New Sheqalim 20 note (2008) - Numbering

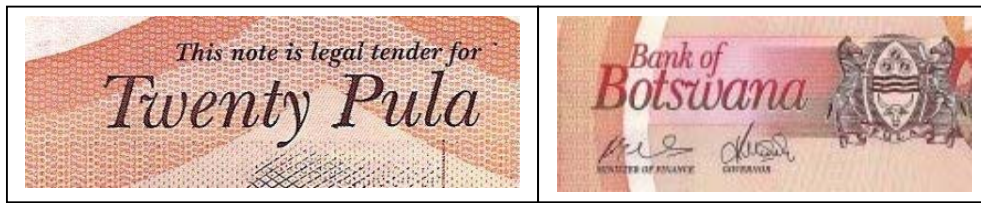


Figure.38 Type of letters on the second set (20 Pula note, two details)

Usage of the script letters could be very interesting and add some special beauty to the text. Unfortunately, in situations where letters have to be as much clear as possible, using script letters is not recommended. In this case, free movement of the letter's line is not adding life. It is adding lack of understanding and clarity.

7. Conclusion

This paper is tried to show difference in design between the first and second set of the Botswana's bank notes. Going through design elements and principles, composition, colours and typography, it is very visible that second set has much better security features, but it is very weak compering design with the first set. Just to mention only the most important - balance of the composition and colour combination at the second set are not done on appropriate way. At one of her interview, Governor of the Bank of Botswana Ms. Linah K. Mohohlo (nee Tsiako) said that "BoB was in harrying working on the new set of notes". It could be explanation for not so good work, but she didn't explained reasons for the hurry. Real reason is maybe standard procedure that design is given to the same company which will print notes. In that case, client country does not have a lot of influence on the design. But, the printing company (in this case De la Rue) could do much better work.

This clearly shows that even today we have much better techniques and equipment, thirty years old design prevailed. And that show another truth that good design is in the head and hand of the designer, not in better or worst equipment.

Sources of Photography

Photography No. 1 - <http://rg.ancients.info/lion/article.html>

Photography 2 and 3 - www.cultural-china.com/chinaWH/html/en/35History2386.html

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