

TWO PICTURES OF JOURNAL GROWTH:
WHICH WAY IS UP?

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PRESENTED AS A POSTER PAPER AT MEETING OF THE ASSOCIATION FOR BEHAVIOR ANALYSIS,
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A NOTE TO THE READER:

THE ORIGINAL POSTER PICTURES WERE DRAWN WITH COLORED PENS. IN ORDER TO REPRODUCE, XEROX COPIES OF THE ORIGINALS WERE DRAWN OVER WITH BLACK INK. IN THE PROCESS, SOME FIDELITY WAS LOST.

IF YOU WISH TO REPRODUCE THE ORIGINALS, USE THE FOLLOWING COLOR SCHEME:

FOR THE PERCENTAGE FIGURES, SIMPLY COLOR THE LOWER HALF OF EACH GRAPH WITHIN FIGURE 1 AND THE ENTIRE LOWER HALF OF FIGURE 2 WITH SKY BLUE TO REPRESENT "REFLECTION."

FOR THE STANDARD ACCELERATION CHART PICTURES:

LABELING ("PAGES," "ARTICLES," "GRAPHS," ETC.) IN BLACK

BRACKETING, ACCELERATION LINES, AND JOURNAL DESIGNATIONS ALL DEEP BLUE FOR JABA AND RED FOR BT

FOR BOTH JOURNALS

| | |
|-----------------------|---------------|
| PAGE LINES | BRIGHT YELLOW |
| ARTICLE LINES | GREEN |
| GRAPH LINES | AZURE BLUE |
| TABLE LINES | ORANGE |
| DATA ARTICLE LINES | PURPLE |
| NO-DATA ARTICLE LINES | MAGENTA |

AS THE CALENDAR HERALDS A NEW DECADE, RETROSPECTIVE APPRAISAL AND FORECASTING BECOME POPULAR. WHAT HAS HAPPENED? WHAT MIGHT HAPPEN? WHERE HAVE WE BEEN AND WHERE MIGHT WE BE GOING?

THE MOST PUBLIC VIEW OF A FIELD IS USUALLY OBTAINED FROM ITS PUBLICATIONS. THIS POSTER PAPER PRESENTS TWO GRAPHIC PORTRAYALS OF SOME GROWTH INDICES FOUND IN TWO JOURNALS: JABA AND BEHAVIOR THERAPY. THESE TWO PORTRAYALS AFFORD THE READER AN OPPORTUNITY FOR CRITICAL COMPARISONS AND CONTRAST. THE ANALYSIS MAKES NO PRETENSE AT BEING EITHER COMPREHENSIVE OR REPRESENTATIVE OF CONTENT (CF, HAYES, ET AL, 1980). RATHER, IT PRESENTS SOME DESCRIPTIVE GROWTH INDICATORS THAT COULD BE RELEVANT FOR THE FUTURE OF STANDARDIZED MEASUREMENT AND GRAPHICS IN APPLIED BEHAVIOR ANALYSIS.

JABA AND BEHAVIOR THERAPY WERE SELECTED FOR TWO REASONS. 1) THEY HAVE LONGER HISTORIES THAN OTHER APPLIED BEHAVIOR ANALYSIS JOURNALS IN THIS COUNTRY, THEREFORE THEY OFFER THE LARGEST BODY OF DATA FOR ANALYSIS. 2) SPAWNED BY JEAB AND SHARING WITH IT THE COMMON SPONSORSHIP OF THE SOCIETY FOR THE EXPERIMENTAL ANALYSIS OF BEHAVIOR, JABA CAN BE CONSIDERED THE "PARENT" RESEARCH JOURNAL IN APPLIED BEHAVIOR ANALYSIS. BEHAVIOR THERAPY, SPONSORED BY THE ASSOCIATION FOR THE ADVANCEMENT OF BEHAVIOR THERAPY, IS A JOURNAL FOR PRACTITIONERS OF MANY DISCIPLINES IN THE HEALTH CARE ARENA.

VIEWED TOGETHER, THE GROWTH PICTURES OF THESE TWO JOURNALS MAY PROVOKE FURTHER COMPARATIVE APPRAISAL OF ABA'S CURRENT AND POTENTIAL PARENTING ROLE IN APPLICATIONS OF HUMAN BEHAVIOR ANALYSIS.

TRUE TO ITS HERITAGE IN EXPERIMENTAL BEHAVIOR ANALYSIS, APPLIED BEHAVIOR ANALYSIS IS DATA-BASED. THUS, TWO SETS OF EASILY COUNTABLE INDICES ARE IMMEDIATELY AVAILABLE FOR ANALYSIS: TYPE OF DATA DISPLAY AND TYPE OF ARTICLE.

PERCENTAGE REFLECTIONS

THE MOST POPULAR METHOD OF COMPARING VARIABLES SELECTED FROM UNEQUAL NS USES PERCENTAGE. SINCE DATA DISPLAYS ARE EITHER TABULAR OR GRAPHIC, A SIMPLE COUNT OF THE TWO IN EACH VOLUME OF EACH JOURNAL YIELDS THE DATA FOR A PERCENTAGE PICTURE OF EACH. SIMILARLY, COUNTS PER VOLUME OF ARTICLES WITH DATA AND THOSE WITHOUT DATA OFFER THE INFORMATION NECESSARY FOR A PERCENTAGE PORTRAYAL OF EACH.

NOTE: PERCENTAGE QUANTIFIES A PART OF A TOTAL AS A PROPORTION OF THAT TOTAL. WHEN THE TOTAL REMAINS CONSTANT, AS THE COUNT OF ONE PART INCREASES, THE COUNT(S) OF THE OTHER PART(S) NECESSARILY DECREASE(S). THE PERCENTAGES OF TOTAL DISPLAYS THAT ARE TABLES AND GRAPHS ARE, THEREFORE, INTERDEPENDENT. THE SAME IS TRUE FOR PERCENTAGES OF DATA ARTICLES COMPARED WITH NO-DATA ARTICLES. THEIR PICTURES ARE REFLECTIONS OF ONE ANOTHER: COMPARE THE LOWER BLUE PORTIONS OF THE FOLLOWING TWO FIGURES WITH THE CORRESPONDING UPPER UN-COLORED PORTIONS.

PERCENTAGE RELATES ALL ITS INTERDEPENDENT COUNTS TO A COMMON BASE OF 100 AND THUS TO A COMMON ORDINATE FROM 0 TO 100. FOR THIS REASON, IT IS CONSIDERED A CONVENIENT WAY OF COMPARING THE SIMILARLY DESIGNATED PARTS OF DISPARATE WHOLES. A COMMON BUT MISLEADING PRACTICE ADJUSTS ORDINATES IN BOTH HEIGHT AND GRAPHIC INTERVAL SIZE TO ACHIEVE VISUAL SIMILARITY.

FIGURE 1 PRESENTS PERCENTAGE REFLECTIONS OF DATA DISPLAYS AND ARTICLE TYPES OVER THE LIFE SPANS OF THE TWO JOURNALS. JABA'S DATA DISPLAYS ARE PRIMARILY GRAPHIC (UPPER LEFT). HOWEVER, JABA'S GRAPHS APPEAR TO BE DECREASING IN PERCENTAGE OVER THE YEARS. TABLE PERCENTAGES SHOW THE OPPOSITE TREND. BEHAVIOR THERAPY ALSO PUBLISHED MORE GRAPHS THAN TABLES IN EIGHT OF ITS ELEVEN YEARS. BEHAVIOR THERAPY'S PERCENTAGES OF GRAPHS ARE SO VARIABLE OVER THE

LAST FIVE YEARS THAT THEIR UPWARD TREND IS NOT READILY APPARENT. TABLES SHOW THE SAME VARIABILITY BUT WITH AN EQUALLY OBSCURE TREND IN THE OPPOSITE DIRECTION.

JABA'S PREFERENCE FOR DATA OVER NO-DATA ARTICLES THROUGHOUT ITS HISTORY (UPPER RIGHT) IS AS CLEAR AS ITS CONSISTENT PREFERENCE FOR GRAPHS OVER TABLES. NO DISCERNIBLE TREND IS APPARENT. BEHAVIOR THERAPY, ON THE OTHER HAND, SHOWS A CLEAR TREND TOWARD MORE DATA ARTICLES WITH CORRESPONDINGLY FEWER NO-DATA ARTICLES.

FIGURE 2 PRESENTS THE COMPONENTS FROM FIGURE 1 IN A CROSS-JOURNAL COMPARISON. THE TRENDS SHOWN IN FIGURE 1 ARE, OF COURSE, THE SAME. FIGURE 2 COMPARES "LEVELS." HERE IT APPEARS THAT JABA HAS CONSISTENTLY MORE GRAPHIC DISPLAYS THAN BEHAVIOR THERAPY AND CONVERSELY, THAT BEHAVIOR THERAPY CONSISTENTLY PRESENTS MORE TABLES THAN JABA. BEHAVIOR THERAPY APPEARS TO HAVE CAUGHT UP WITH JABA'S RELATIVELY HIGH PERCENTAGE OF DATA ARTICLES AND, CONVERSELY, BEHAVIOR THERAPY APPEARS TO HAVE DROPPED DOWN TO JABA'S RELATIVELY LOW PERCENTAGE OF NO-DATA ARTICLES.

NOTE: AS IN FIGURE 1, WHERE THE WITHIN-CHART VALUES ARE REFLECTIONS OF ONE ANOTHER, IN FIGURE 2, THE BETWEEN CHART VALUES ARE MIRROR TRACINGS OF EACH OTHER. BOTH SETS OF MIRROR TRACINGS REVEAL THE DEPENDENCE OF ONE PERCENTAGE VALUE ON ITS COUNTERPART.

UNLESS THERE ARE SPECIFIC PRODUCTION COST RESTRAINTS, IN NEITHER JABA NOR BEHAVIOR THERAPY ARE THE COUNTS OF TABLES AND GRAPHS OR THE COUNTS OF DATA AND NO-DATA ARTICLES DEPENDENT ON ONE ANOTHER. NOR ARE THE COUNTS OF ANALYTIC, EXPERIMENTAL, AND OTHER TYPES OF ARTICLES THAT APPEAR IN HAYES, ET AL'S PERCENTAGE ANALYSIS OF JABA PUBLICATION TRENDS (1980).

FREQUENCY COMPONENTS AND CELERATION PICTURES

A MORE REALISTIC AND STRAIGHTFORWARD PORTRAYAL OF CONTENT VARIABLES WILL SIMPLY USE THE RAW DATA--COUNT PER YEAR OF EACH PART INDEPENDENT OF OTHER PARTS. THE REMAINDER OF THIS ANALYSIS

FOCUSES ON YEARLY COUNTS OF TWO TYPES OF DATA DISPLAY AND TWO TYPES OF ARTICLES. IT STARTS WITH THE YEARLY COUNTS OF TEXT PAGES AND ARTICLES--TWO GENERAL INDICES OF PRODUCTIVITY--WHICH, QUITE REALISTICALLY, PLACE SOME CONSTRAINTS ON THE FREQUENCIES OF BOTH DATA DISPLAY TYPES AND ARTICLE TYPES.

FIGURE 3 DEPICTS THE GENERAL PRODUCTIVITY OF JABA AND BEHAVIOR THERAPY AS TEXT PAGES PUBLISHED PER YEAR. NOTE THAT JABA STARTED SMALLER THAN BEHAVIOR THERAPY AND DID NOT REACH BEHAVIOR THERAPY'S INITIAL PAGE PRODUCTIVITY UNTIL 1972--TWO YEARS AFTER BEHAVIOR THERAPY BEGAN. FOLLOWING THAT, THE PAGE FREQUENCIES OF THE TWO JOURNALS ARE VERY SIMILAR.

FIGURE 4 SHOWS ARTICLE PRODUCTIVITY. AGAIN, WE SEE JABA'S LESS AUSPICIOUS EARLY YEARS AND THE SIMILARITY OF THE TWO JOURNALS ON YET ANOTHER INDEX OF PRODUCTIVITY.

FIGURES 5 AND 6 PRESENT GROWTH COMPARISONS OF THESE TWO PRODUCTIVITY INDICES FOR EACH JOURNAL. JABA'S PAGE ACCELERATION OF $\times 1.4$ EVERY FIVE YEARS COMPARED WITH $\times 1.2$ FOR BEHAVIOR THERAPY INDICATES THAT, OVER ITS LIFE SPAN, JABA HAS BEEN GROWING A BIT FASTER THAN BEHAVIOR THERAPY. JABA'S ARTICLE GROWTH OF $\times 1.37$ APPROXIMATES ITS PAGE GROWTH. HOWEVER, BEHAVIOR THERAPY'S ARTICLE GROWTH OF $\times 1.15$ EVERY FIVE YEARS IS SLOWER THAN JABA'S. COMPARING THE PAGE ACCELERATION TO THE ARTICLE ACCELERATION FOR EACH OF THE TWO JOURNALS, JABA SEEMS TO BE MAINTAINING A RATIO OF ABOUT 8 PAGES PER ARTICLE WHILE BEHAVIOR THERAPY'S CHANGE FROM 7.5 TO 9 PAGES PER ARTICLE INDICATES THAT ITS ARTICLES ARE GETTING LONGER.

JABA'S ARTICLE GROWTH SHOWS A TURN-DOWN AFTER 1977 OF ABOUT $\div 1.9$. DOES THIS LATE TREND OF INCREASING ARTICLE LENGTH REFLECT THE CHANGE IN EDITORIAL LEADERSHIP FROM AGRAS TO O'LEARY? IF SO, WHAT INFLUENCE WILL BARLOW SHOW? OR DOES IT SIMPLY REFLECT THE BEGINNING OF BEHAVIOR MODIFICATION IN 1977, EDUCATION AND TREATMENT OF CHILDREN IN 1978 AND/OR THE START OF BEHAVIORAL ASSESSMENT IN 1979?

HAVING LOOKED AT TWO INDEPENDENT INDICES WHICH MAY AFFECT THE GROWTH OF DATA DISPLAYS AND DATA POPULARITY, WE NOW RETURN TO THESE VARIABLES OF IMMEDIATE INTEREST.

FIGURE 7 COMPARES THE TWO JOURNALS' FREQUENCIES OF GRAPHIC DATA PRESENTATION--THE MOST IMPORTANT FORM OF SCIENTIFIC COMMUNICATION. IN SPITE OF A DOWNWARD TREND SINCE 1973, JABA HAS MAINTAINED A CONSISTENTLY HIGHER FREQUENCY THAN BEHAVIOR THERAPY (MEDIAN APPROXIMATELY X2 THAT OF BEHAVIOR THERAPY). BEHAVIOR THERAPY'S FREQUENCIES SHOW A SHARP DROP SINCE 1978. THIS MAY BE DUE TO THE INFLUENCE OF KAZDIN WHO ASSUMED EDITORSHIP THAT YEAR.

FIGURE 8 LOOKS AT FREQUENCY OF TABULAR DATA IN JABA AND BEHAVIOR THERAPY. IT TOOK FIVE YEARS FOR JABA'S TABLE FREQUENCY TO REACH THE RANGE OF BEHAVIOR THERAPY'S FREQUENCIES. ITS TREND SINCE THEN HAS BEEN VARIABLE. FOLLOWING ITS FIRST THREE YEARS, BEHAVIOR THERAPY'S FREQUENCIES OF TABULAR DISPLAY HAVE BEEN FAIRLY STABLE AND ABOUT TWICE THOSE OF JABA.

FIGURES 9 AND 10 SUPPLEMENT PRODUCTIVITY GROWTH WITH GROWTH COMPARISONS OF THE TWO TYPES OF DATA DISPLAY FOR EACH JOURNAL. ALTHOUGH LOWER IN FREQUENCY THAN JABA, BEHAVIOR THERAPY'S X1.17 GROWTH IN GRAPHIC PRESENTATION IS SLIGHTLY FASTER THAN JABA'S (X1.06). WHILE BEHAVIOR THERAPY'S TABLE FREQUENCY STARTED OUT WELL ABOVE JABA'S, ITS GROWTH OF X1.18 IS NEARLY IDENTICAL TO ITS GROWTH OF GRAPHIC DISPLAYS. JABA'S TABLES, ON THE OTHER HAND, SHOW A STEEP ACCELERATION, X1.56. IF ITS RATE OF GROWTH IN TABULAR PRESENTATION CONTINUES APACE, JABA WILL DISPLAY TWICE BEHAVIOR THERAPY'S NUMBER OF TABLES BY 1993. IF THE CURRENT TREND CONTINUES, BY 1993 JABA WILL CONTAIN MORE TABLES THAN GRAPHS. IF THE X1.7 TURN-DOWN OCCURRING AFTER 1973 CONTINUES TO HOLD, THE PREPONDERANCE OF TABLES OVER GRAPHS IN JABA WILL OCCUR AS EARLY AS 1983.

NOTE: THIS IS, INDEED, AN OMINOUS FORECAST FOR THE "PARENTAL" JOURNAL WHOSE OWN PARENTAL DATA WERE DISPLAYED IN CUMULATIVE GRAPHIC FORM--DRAWN DIRECTLY BY THE SUBJECT'S BEHAVIOR AND ANALYZED VISUALLY BY THE EXPERIMENTER. AS WE ALL KNOW, TABLES DO NOT OFFER A PICTURE. THUS, THEY FAIL TO PRESENT STIMULI FOR INTERPRETIVE BEHAVIOR (JOHNSTON & PENNYPACKER, 1980). TABULAR PRESENTATION OF THE DATA SHOWN HERE WOULD CONTAIN 144 ENTRIES IN 13 ROWS AND 12

COLUMNS. NO RELATIONSHIPS WOULD BE EVIDENT. HOW MANY TIMES HAVE YOU TRIED TO VISUALLY ANALYZE THE CONTENTS OF A COMPLEX TABLE? IT HAS BEEN SAID THAT LARGE-SCALE TABULAR PORTRAYAL OF DATA MIGHT BE CHARACTERIZED AS "ATTEMPTED OBFUSCATION" (BUCHMAN, 1980). AT THE VERY LEAST, DEPENDENCE ON TABULAR DATA PRESENTATION FAILS TO TAKE THE FINAL STEP IN THE MOST COMMONLY ACCEPTED PROCESS OF SCIENTIFIC COMMUNICATION.

FIGURE 11 COMPARES THE FREQUENCY OF DATA ARTICLES IN JABA AND BEHAVIOR THERAPY. CONTRARY TO THE PERCENTAGE PICTURE (UPPER RIGHT, FIGURE 2), THERE HAS BEEN NO GREAT DISCREPANCY BETWEEN THE TWO JOURNALS IN THE FREQUENCY PATTERNS OF THEIR DATA ARTICLES. BEHAVIOR THERAPY'S DATA ARTICLES APPEAR TO HAVE PICKED UP EARLIER THAN JABA'S. BOTH SHOW A DROP IN THE LAST FEW YEARS--PERHAPS ASSOCIATED WITH THE ADVENT OF THE THREE NEW JOURNALS.

FIGURE 12'S PICTURE OF NO-DATA ARTICLES SHOWS TWO VERY DISCREPANT PATTERNS. WITH CONSIDERABLE BOUNCE, JABA'S PUBLICATION OF NO-DATA ARTICLES SHOWS GROWTH THROUGH 1977 FOLLOWED BY THE SAME DROP SEEN IN DATA ARTICLES AND TOTAL NUMBER OF ARTICLES. BEHAVIOR THERAPY, ON THE OTHER HAND, SHOWS A CLEAR DECELERATING PATTERN OF NO-DATA ARTICLES.

FIGURES 13 AND 14 COMPLETE THE RELEVANT ACCELERATION PICTURES OF JABA AND BEHAVIOR THERAPY BY ADDING THE OVERALL TRENDS OF BOTH DATA AND NO-DATA ARTICLES. JABA'S ACCELERATIONS OF EACH ARE IDENTICAL ($\times 1.35$). THE RATIO BETWEEN THE TWO IS CONSISTENTLY ABOUT 6 DATA TO 1 NO-DATA ARTICLES. INVITED MANUSCRIPTS ON ISSUES IN THE FIELD, DISCUSSIONS OF VARIOUS ASPECTS OF THE FIELD, COMMENTARIES ON CONTROVERSIAL ARTICLES AND LITERATURE REVIEWS SUGGEST THAT JABA IS BALANCING ITS RESEARCH PUBLICATIONS WITH CRITIQUES--A HEALTHY PROCESS OF SELF-EXAMINATION DURING THIS PERIOD OF "TECHNOLOGICAL DRIFT" (HAYES, ET AL, 1980).

BEHAVIOR THERAPY, HOWEVER, SHOWS AN ALARMING PATTERN OF DATA ARTICLES ACCELERATING AT $\times 1.5$ WITH NO-DATA ARTICLES DECELERATING AT $\div 2.2$. BY 1985, BEHAVIOR THERAPY COULD HAVE 40 DATA ARTICLES FOR EVERY NO-DATA ARTICLE.

FRANTIC TECHNOLOGICAL ACTIVITY, ASSISTED BY READILY AVAILABLE COMPUTERS, SEEMS TO HAVE CONVERTED OUR CLINICAL BROTHERS INTO DATA-HAPPY AUTHORS! WHAT HAS HAPPENED TO THE CRITICAL SELF-EVALUATIONS AND CONCEPTUAL DEVELOPMENT SO NECESSARY FOR RENEWED PERSPECTIVE ON THIS BURGEONING CURE-ORIENTED WORK?

SOME HAVE SUGGESTED THAT CRITIQUES FORMERLY APPEARING IN BEHAVIOR THERAPY NOW APPEAR IN THE AABT'S NEWSLETTER. PUBLICATIONS OF THIS NATURE ARE USUALLY COLLECTED IN THE "EPHEMERAL LITERATURE" CATEGORY IN MOST LIBRARIES.

BIRNBRAUER STATED THAT THE SCIENCE OF APPLIED BEHAVIOR ANALYSIS IS BECOMING "SUPERFICIAL," "RESTRICTIVE," "PETRIFIED," WITH EMPHASIS ON STUDYING PROCEDURES RATHER THAN PRINCIPLES (1979), HAYES ET AL, (1980) AND BARLOW (1980) ECHO THIS APPRAISAL, AND ALL THREE NOTE THAT THERE IS LITTLE INTEREST IN ANALYZING THE COMPONENTS OF TREATMENT PACKAGES OR IN STUDYING THE GENERALITY OF THE PRINCIPLES THAT GENERATED PROGRESS IN THE FORMATIVE YEARS OF OUR FIELD.

IF THIS PICTURE IS REPRESENTATIVE, PRACTITIONER-AUTHORS ARE GENERATING MASSIVE AMOUNTS OF DATA. BUT EVEN A CASUAL PERUSAL OF MEASUREMENT PROCEDURES AND GRAPHIC DISPLAYS APPEARING IN BOTH JABA AND BEHAVIOR THERAPY REVEALS A RANGE OF INDIVIDUALITY BROAD ENOUGH TO PRECLUDE COMPARISONS FROM ONE STUDY TO ANOTHER.

AS A RESULT, DIFFERENCES AND SIMILARITIES OF EFFECT ARE CONFOUNDED BY DIFFERENCES IN MEASUREMENT AND GRAPHIC DISPLAY (LINDSLEY, 1979). MOST EFFECTS CAN BE MADE TO LOOK DRAMATIC BY ADJUSTING GRAPHIC AXES FOR MAXIMAL VISUAL IMPACT.

PRACTITIONER ACCOUNTABILITY THROUGH REQUIRED DEMONSTRATION OF EFFECTS HAS BEEN FORECAST TO HELP CLOSE THE SCIENTIST-PRACTITIONER GAP (BARLOW, 1980). AT PRESENT, HOWEVER, THEIR "MEASUREMENT" SYSTEMS ARE SUFFICIENTLY IDIOSYNCRATIC TO MAKE PRACTITIONER-BASED SALVATION UNLIKELY.

LINDSLEY (1980) HAS APTLY DEMONSTRATED THAT COMPARABILITY CAN BE ACHIEVED WITH STANDARD MEASUREMENT.

ONLY IF PRACTITIONERS EMPLOY STANDARD MEASURES AND STANDARD GRAPHIC ANALYSES CAN OUR REMAINING ANALYTIC RESEARCHERS MAKE USE OF THEIR PRODUCTS FOR ADVANCEMENT OF THE SCIENCE OF APPLIED BEHAVIOR ANALYSIS.

REFERENCE NOTES

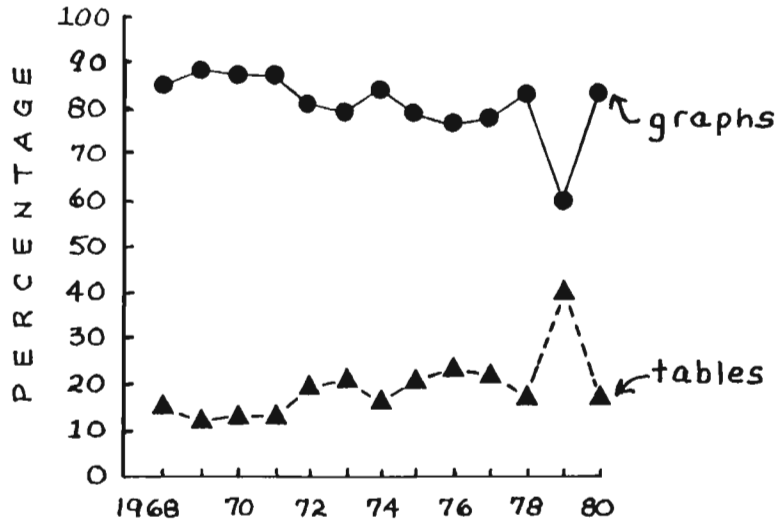
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2. LINDSLEY, O.R. 100 YEARS OF LEARNING ON STANDARD ACCELERATION CHARTS. PAPER PRESENTED AT THE MEETING OF ASSOCIATION FOR BEHAVIOR ANALYSIS, DEARBORN, MAY 1980.
3. LINDSLEY, O.R. RATE OF RESPONSE FUTURES. PAPER PRESENTED AT THE MEETING OF ASSOCIATION FOR BEHAVIOR ANALYSIS, DEARBORN, JUNE 1979.

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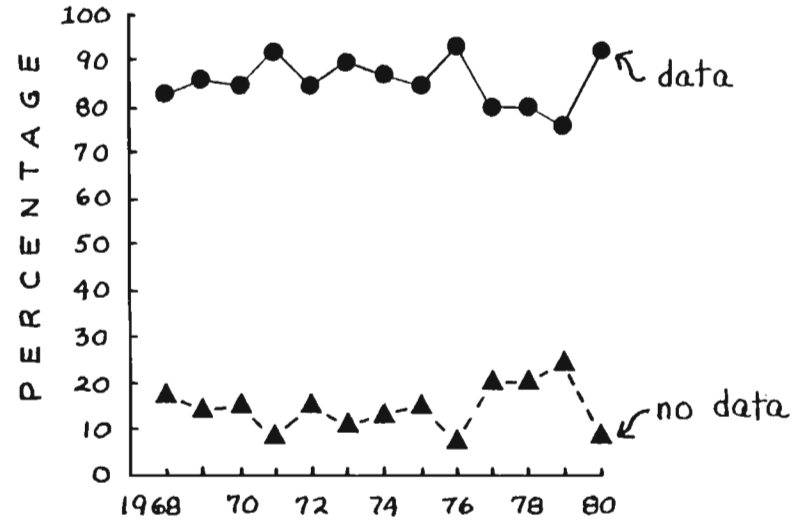
DATA DISPLAYS

JABA

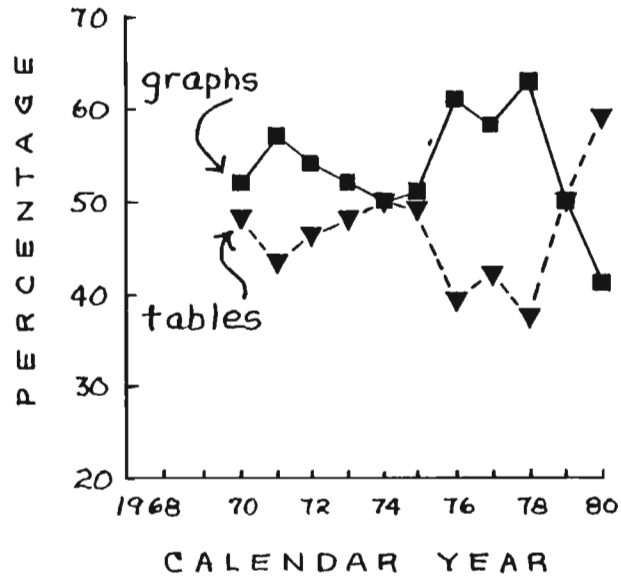


ARTICLE TYPE

JABA



BEHAVIOR THERAPY



BEHAVIOR THERAPY

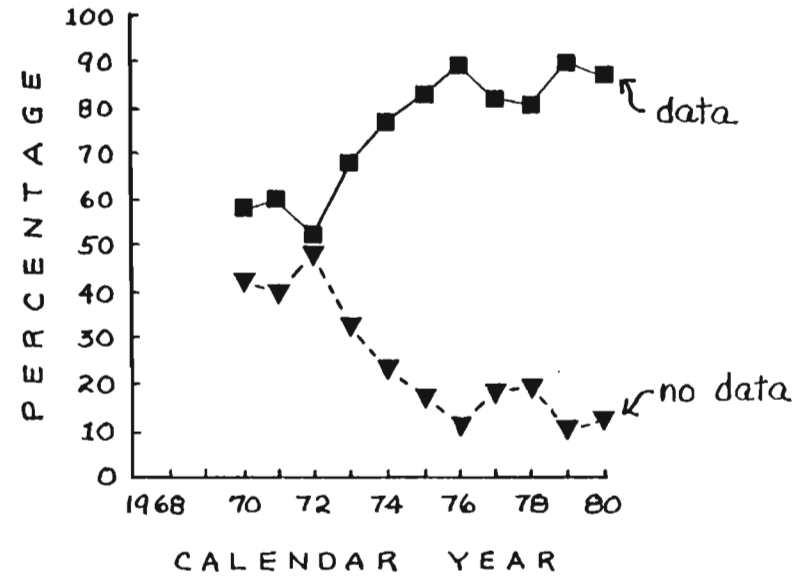


FIGURE 1

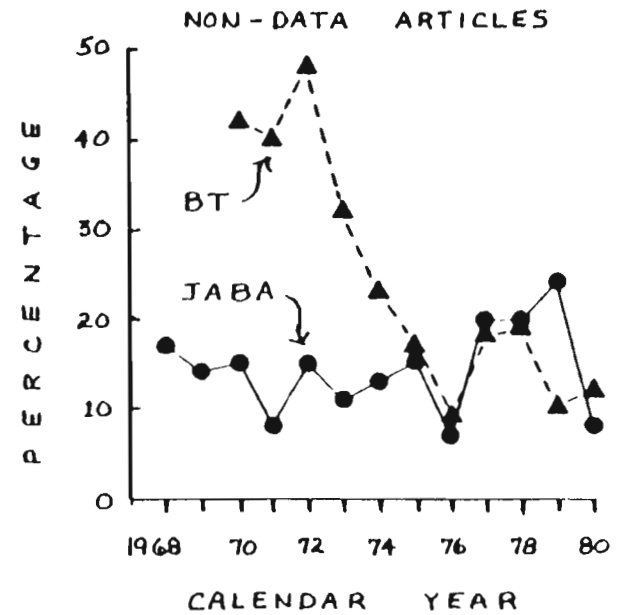
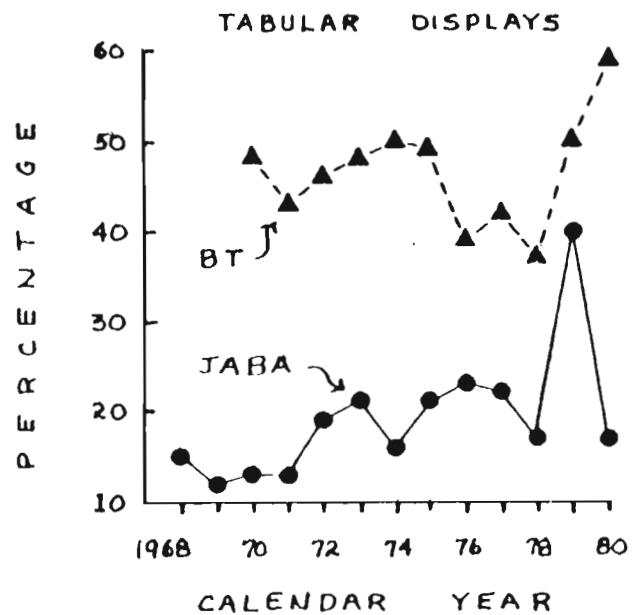
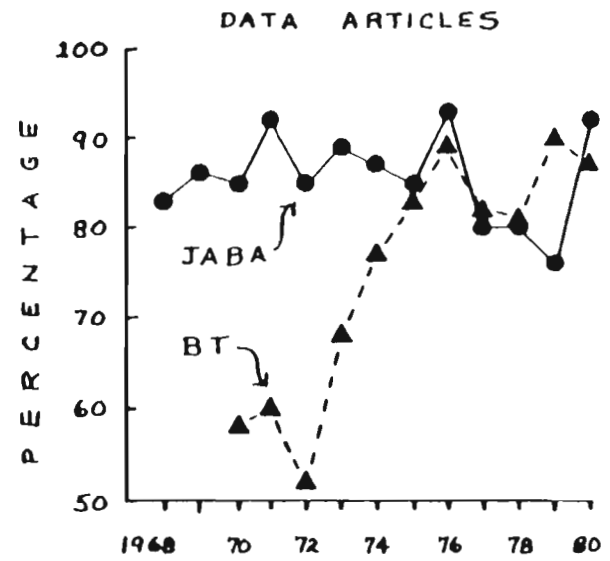
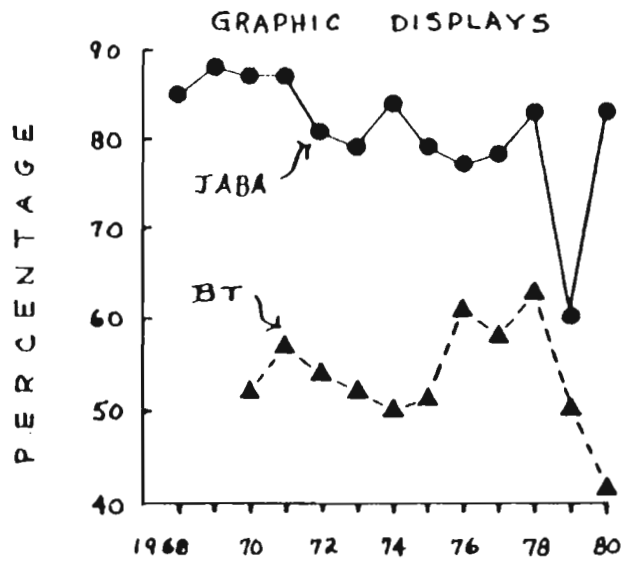


FIGURE 2

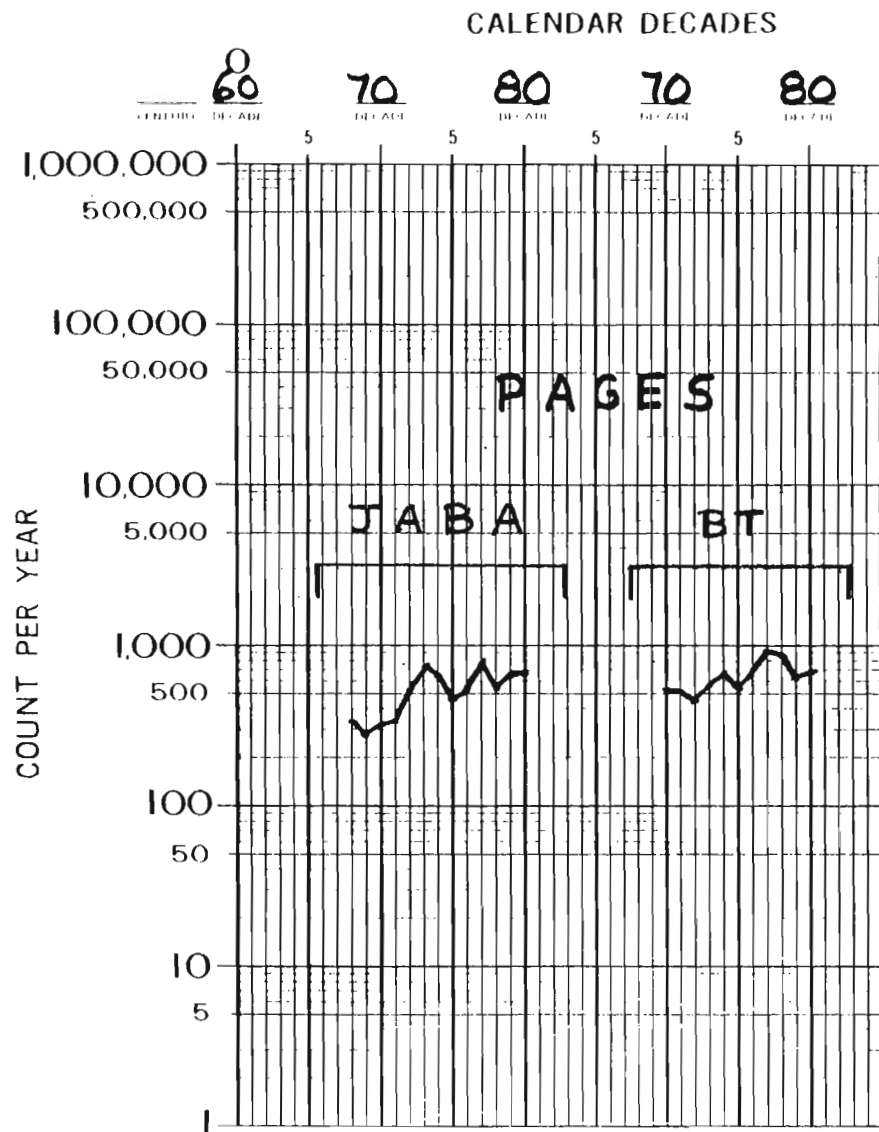


FIGURE 3

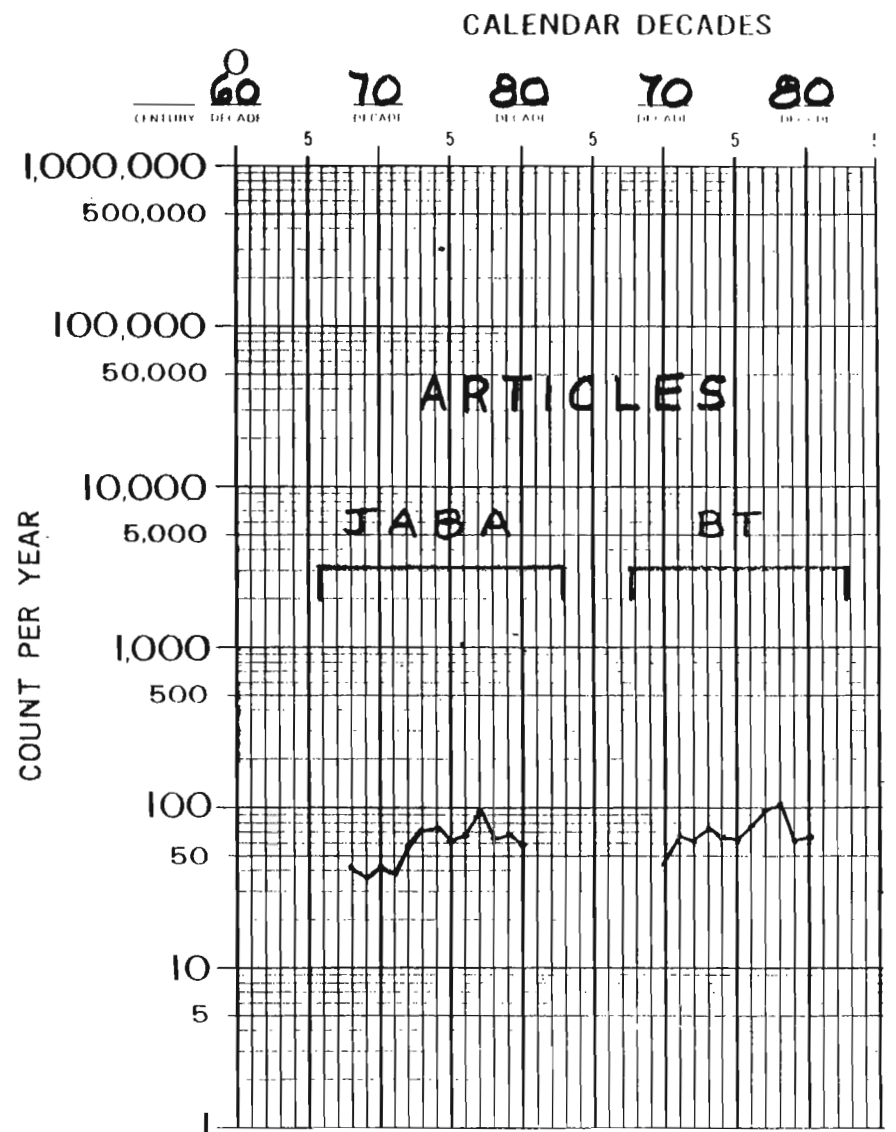


FIGURE 4

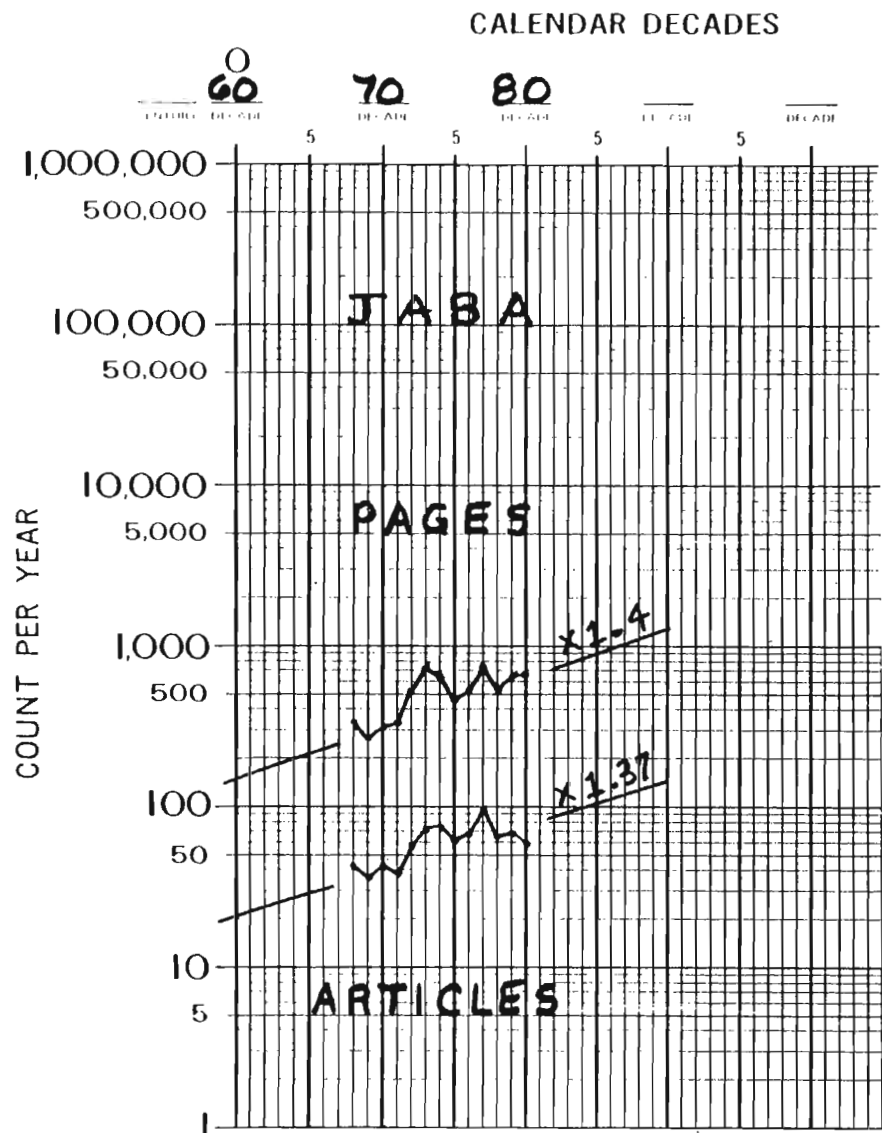


FIGURE 5

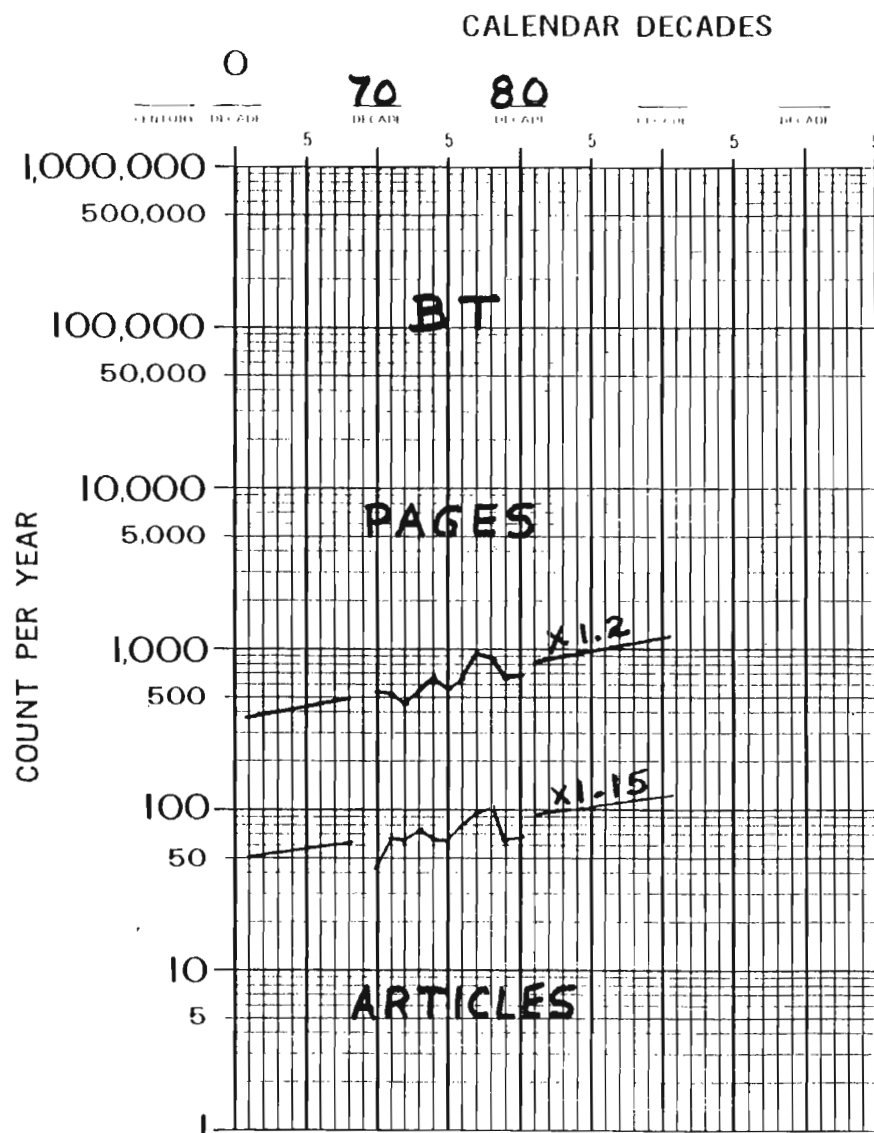


FIGURE 6

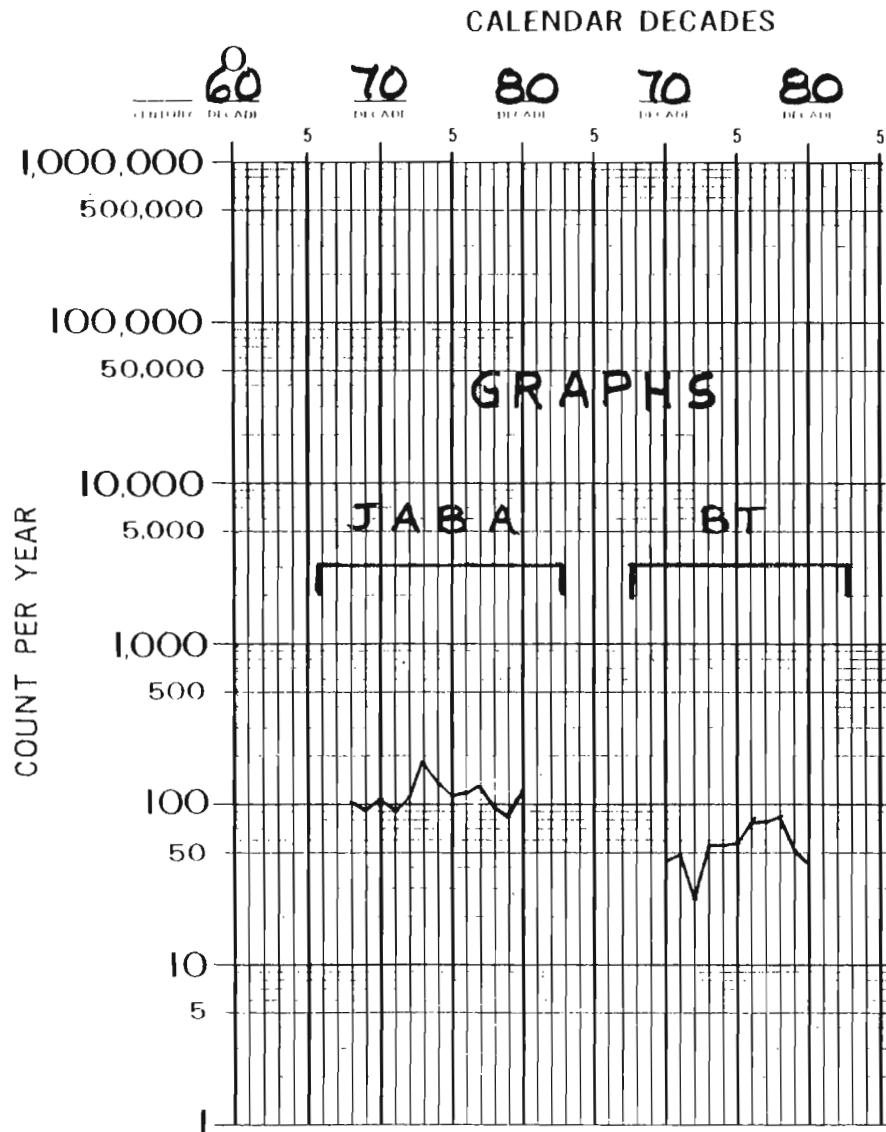


FIGURE 7

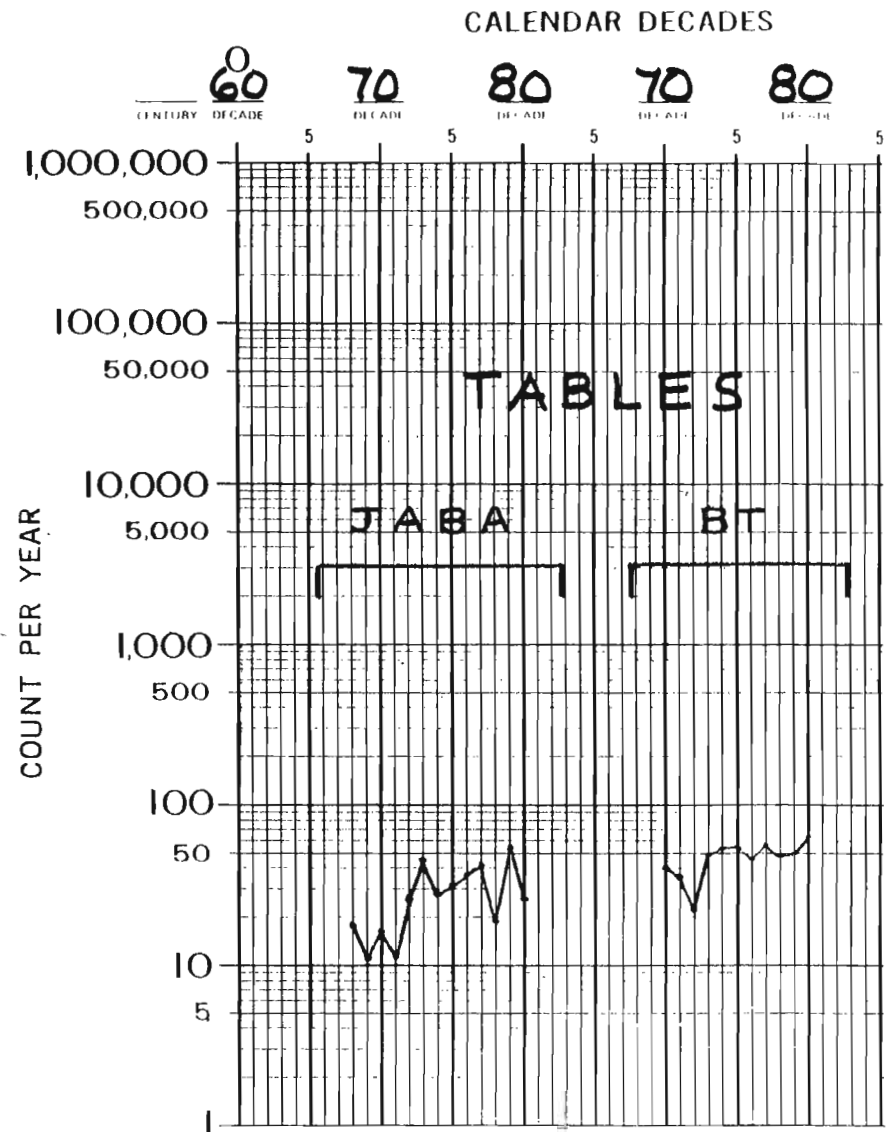
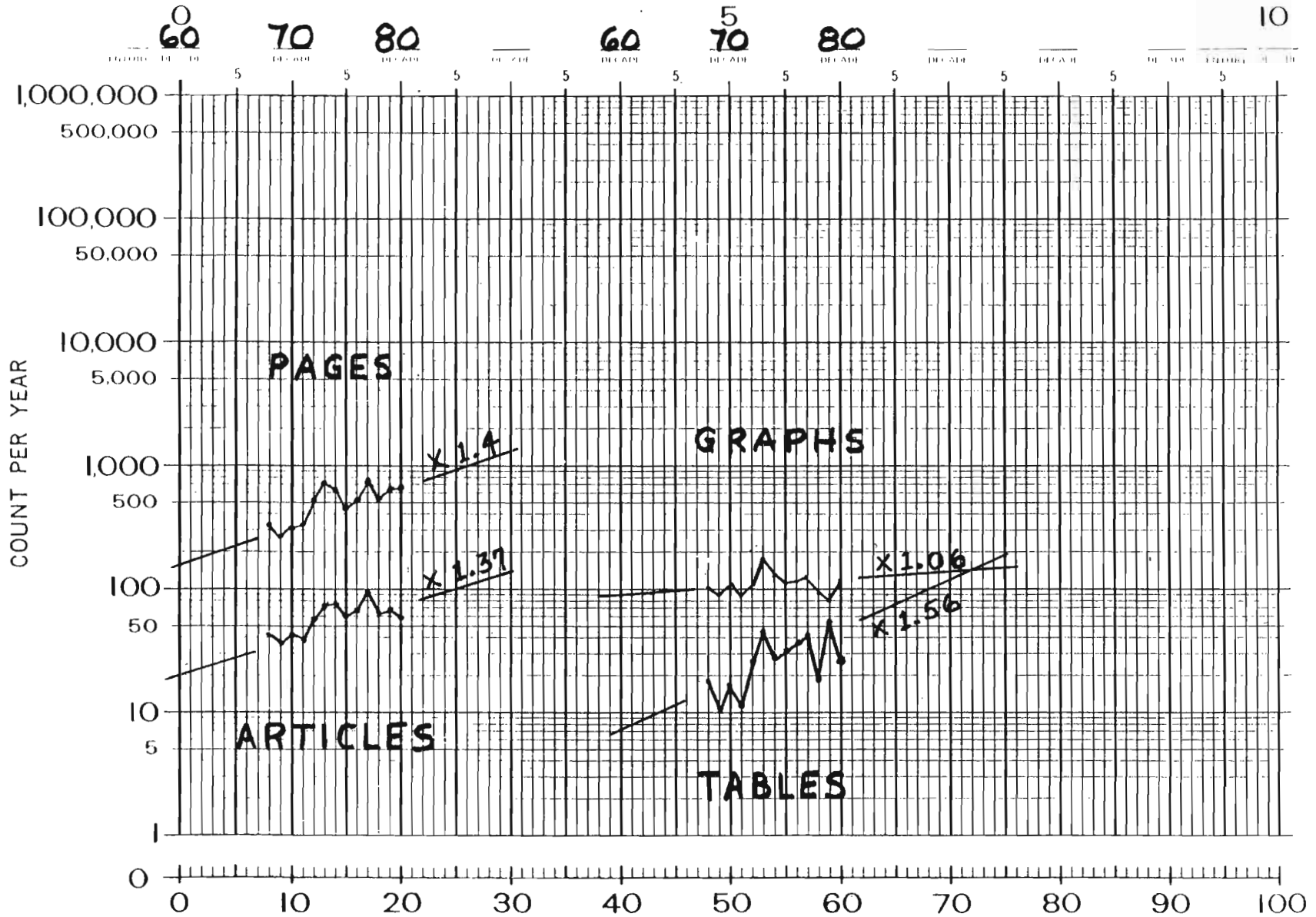


FIGURE 8



YEARLY BEHAVIOR CHART (YCM-1EN)
 6 CYCLE - 100 YEARS (10 DECADES)
 BEHAVIOR RESEARCH CO.
 BOX 3351 KANSAS CITY, KANS. 66103

CALENDAR DECADES



10

COUNT PER YEAR

SUCCESSIVE CALENDAR YEARS

pages, graphs
 articles, tables

SUPERVISOR ADVISER MANAGER

JABA
 BEHAVIOR

13

AGE LABEL COUNTED

FIGURE 9

DEPOSITOR

AGENCY

TIMER

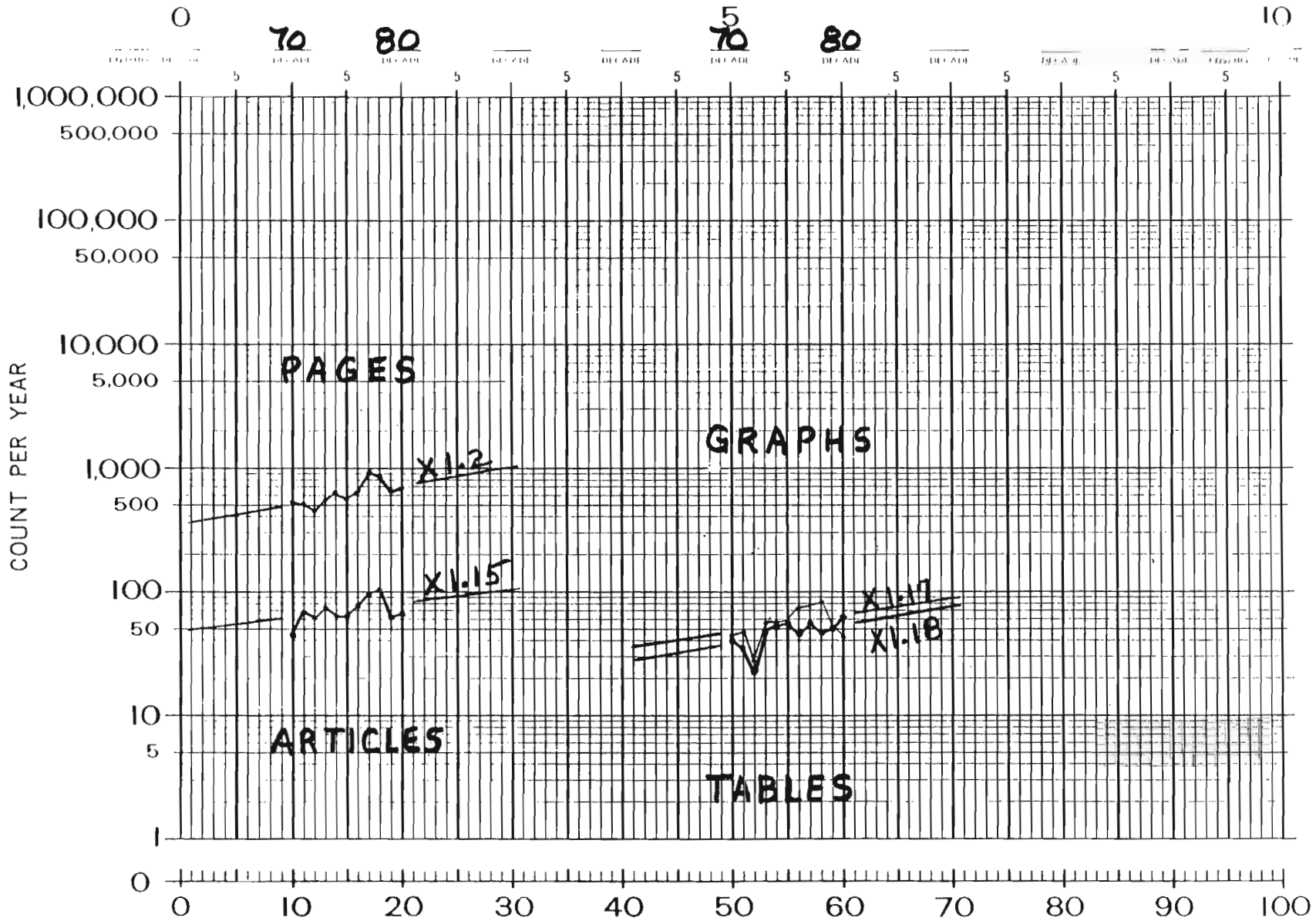
COUNTER

CHARTER



YEARLY BEHAVIOR CHART (YCM-1EN)
 6 CYCLE 100 YEARS (10 DECADES)
 BEHAVIOR RESEARCH CO.
 BOX 3351 KANSAS CITY, KANS. 66103

CALENDAR DECADES



SUPERVISOR ADVISER MANAGER

SUCCESSIVE CALENDAR YEARS

FIGURE 10

BT
BEHAVIOR

II
AGE LABEL

pages, tables
articles, graphs
COUNTED

DEPOSITOR

AGENCY

TIMER

COUNTER

CHARTER

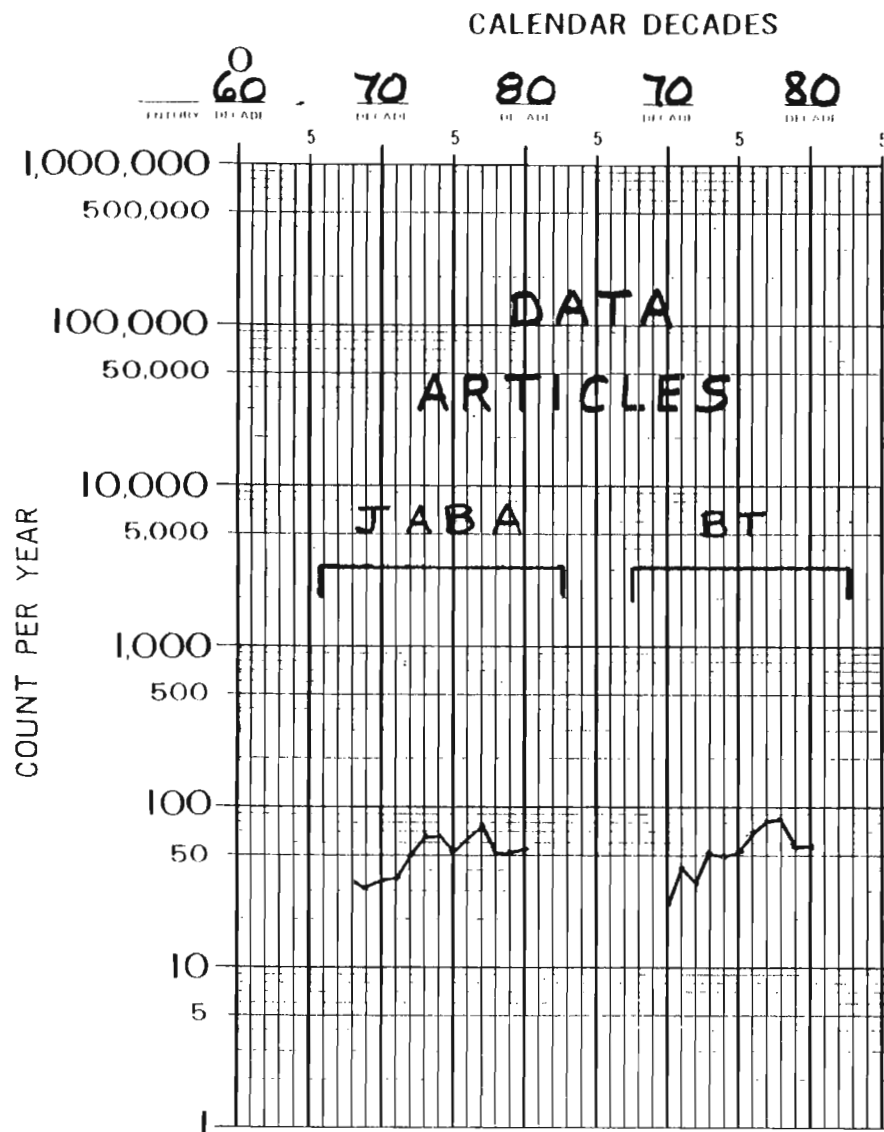


FIGURE 11

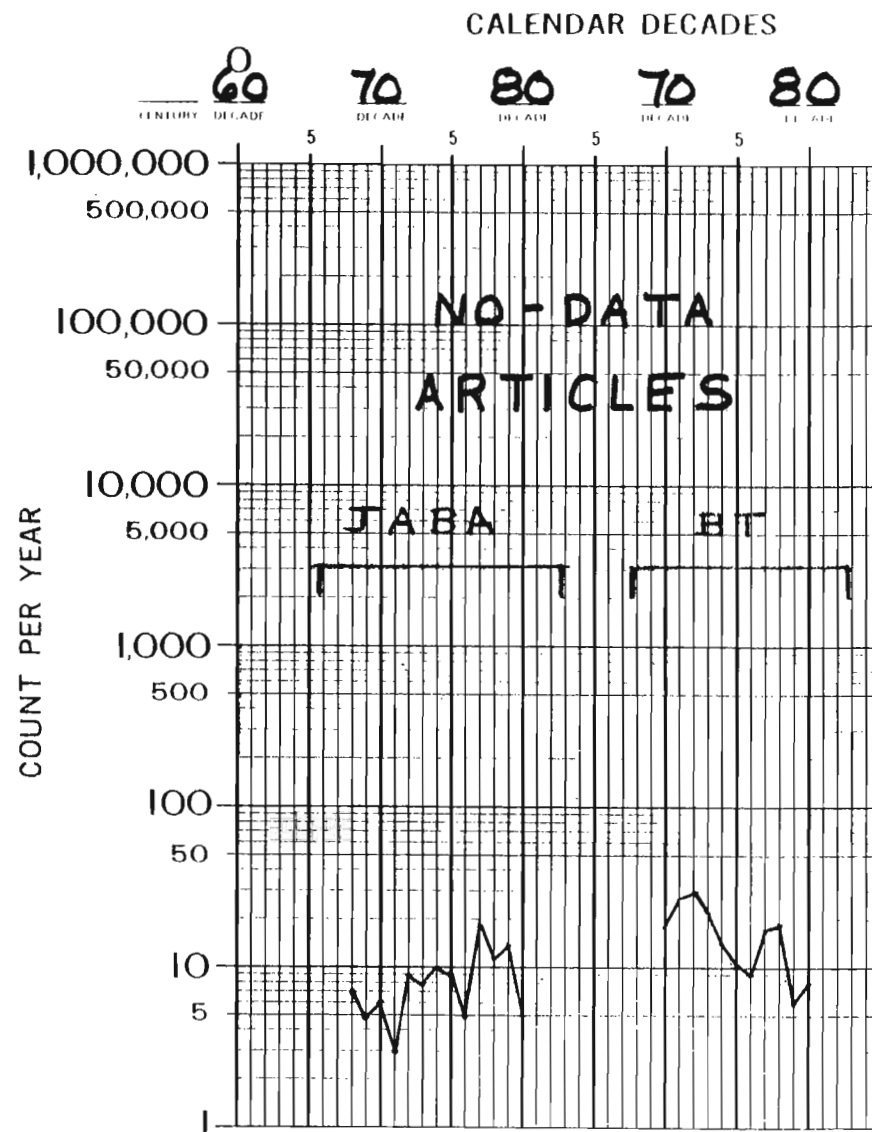
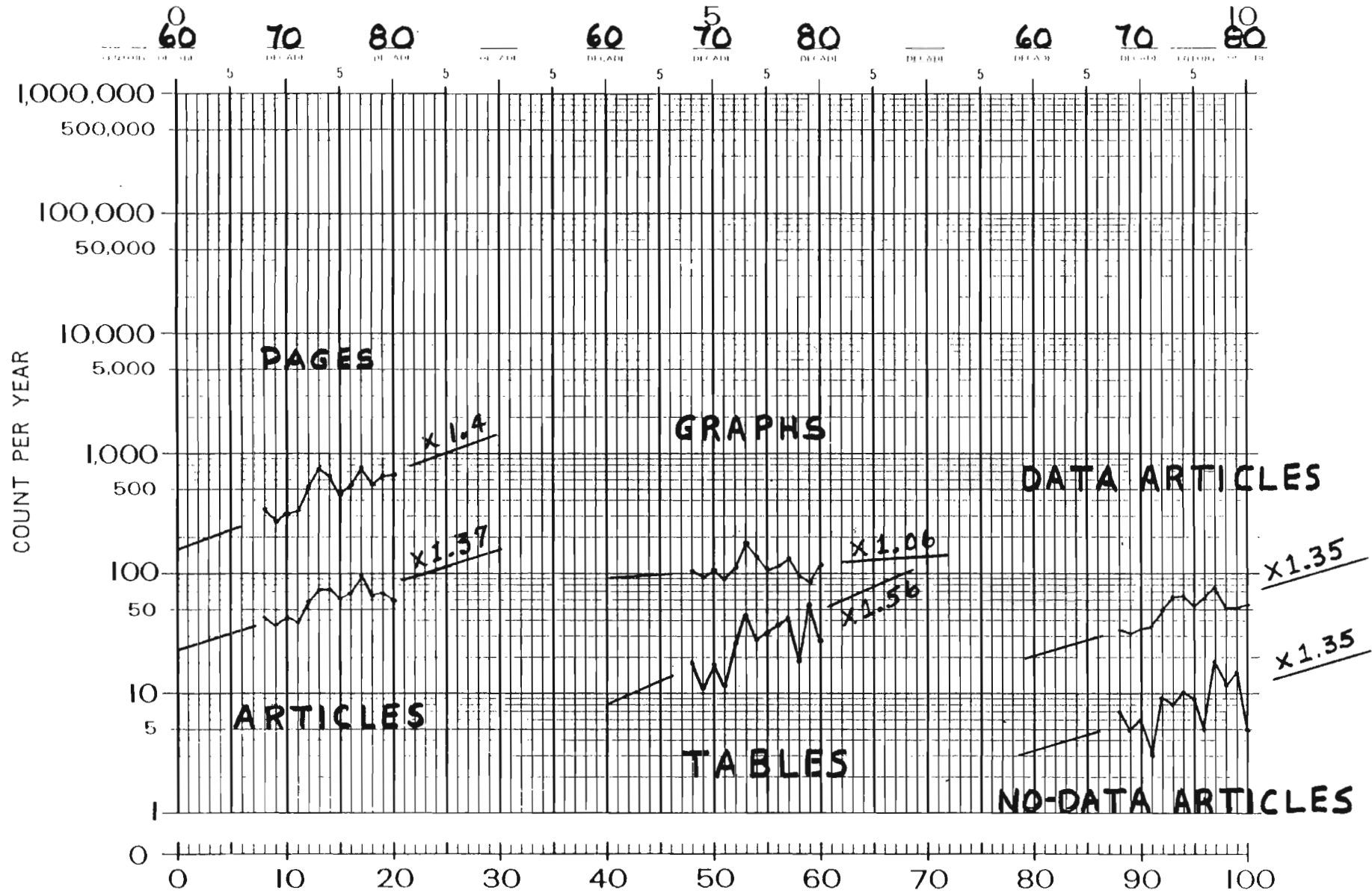


FIGURE 12



YEARLY BEHAVIOR CHART (YCM-1EN)
 6 CYCLE 100 YEARS (10 DECADES)
 BEHAVIOR RESEARCH CO
 BOX 3351 KANSAS CITY KANS. 66103

CALENDAR DECADES



SUCCESSIVE CALENDAR YEARS

JABA
BEHAVIOR

13
AGE

pages, graphs, data articles
 articles, tables, no-data "

SUPERVISOR ADVISER MANAGER

LABEL COUNTED

FIGURE 13

DEPOSITOR

AGENCY

TIMER

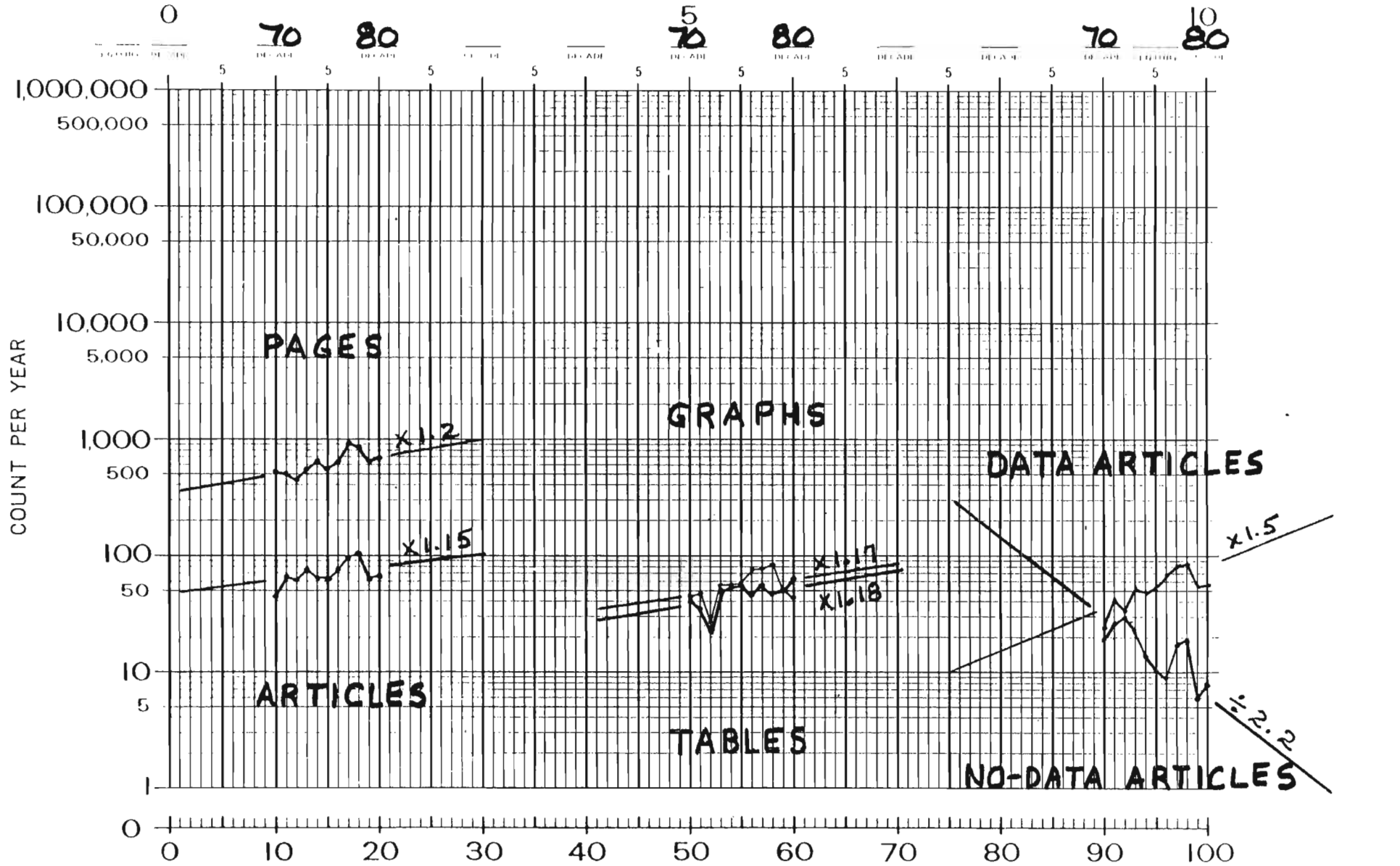
COUNTER

CHARTER



YEARLY BEHAVIOR CHART (YCM-1EN)
 6 CYCLE 100 YEARS (10 DECADES)
 BEHAVIOR RESEARCH CO.
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CALENDAR DECADES



SUCCESSIVE CALENDAR YEARS

SUPERVISOR ADVISER MANAGER

DEPOSITOR

AGENCY

TIMER

COUNTER

BT

CHARTER

11

AGE

LABEL

COUNTED

pages, graphs, data articles
 articles, tables, no data "

FIGURE 14